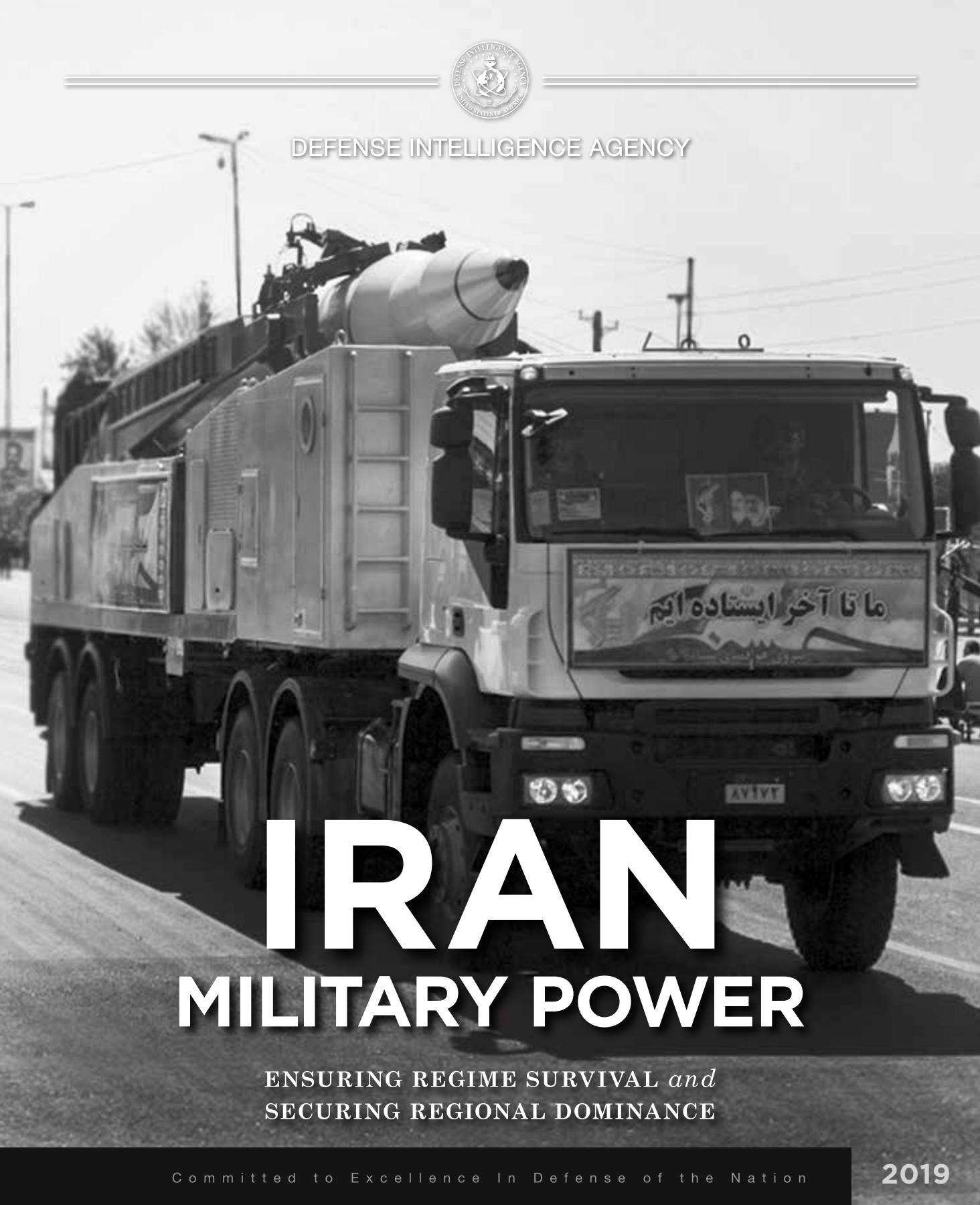
DEFENSE INTELLIGENCE AGENCY



IRAN
MILITARY POWER

ENSURING REGIME SURVIVAL *and* SECURING REGIONAL DOMINANCE

Committed to Excellence In Defense of the Nation

2019

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Cover image: An Iranian Shahab 3 medium-range ballistic missile on parade in Tehran in September 2017. The placard on the front of the mobile launcher reads: "We will stand until the end."

Source: Islamic Republic of Iran Broadcasting (IRIB).

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PREFACE

In September 1981, Secretary of Defense Caspar Weinberger asked the Defense Intelligence Agency (DIA) to produce an unclassified overview of the Soviet Union's military strength. The purpose was to provide America's leaders, the national security community, and the public a comprehensive and accurate view of the threat. The result: the first edition of Soviet Military Power. DIA produced more than 250,000 copies, and it soon became an annual publication that was translated into eight languages and distributed around the world. In many cases, this report conveyed the scope and breadth of Soviet military strength to U.S. policymakers and the public for the first time.

In 2017, DIA began to produce a series of unclassified Defense Intelligence overviews of the major foreign military challenges facing the United States. This volume provides details on Iran's defense and military goals, strategy, plans, and intentions; the organization, structure, and capability of its military supporting those goals; and the enabling infrastructure and industrial base. This product and other reports in the series are intended to inform our public, our leaders, the national security community, and partner nations about the challenges we face in the 21st century.

Iranian Supreme Leader Ali Khamenei's address to graduates of the Iranian Naval Academy, 9 September 2018:

"Today, the policy that the Front of Arrogance—headed by the oppressive and cruel United States—has adopted is a malicious policy. They have defined their interests in causing instability throughout many parts of the world, particularly in our region…Their goal is to prevent an Islamic power in the region from emerging and rising…The Islamic Republic has stood up against this policy with complete power… My dear ones, what has astounded intelligent people around the world is that with reliance on Allah the Exalted and with reliance on national power, the Islamic Republic has managed to defeat the United States in achieving its main goal in the region."[1]

Throughout its 40-year history, the Islamic Republic of Iran has remained implacably opposed to the United States, our presence in the Middle East, and our support to Israel. While attempting to strengthen its deterrence against foreign attack and influence, Tehran has committed itself to becoming the dominant power in the turbulent and strategic Middle East. Its ambitions and identity as a largely Persian Shia power in a region composed of primarily Arab Sunni states often put it at odds with its neighbors, most of which look to the United States and the West to guarantee their security.

Iran sees itself as closer than ever to achieving its goals. Tehran has played the cards dealt it by the fall of Saddam, the uprising in Syria, the rise and retreat of ISIS, and the conflict in Yemen. It leads a cohesive if informal bloc of Shia and Alawi state and nonstate actors—its "Axis of Resistance" against the West. Meanwhile, a perception that the United States is disinterested and disengaged pervades the region.

By applying a rigorous lessons-learned process during decades of conflict in the Middle East, Iran has adapted its military capabilities and doctrine to account for developments by the United States and its allies. Although still technologically inferior to most of its competitors, the Iranian military has progressed substantially over the past few decades.

To achieve its goals, Iran continues to rely on its unconventional warfare elements and asymmetric capabilities—intended to exploit the perceived weaknesses of a superior adversary—to provide deterrence and project power. This combination of lethal conventional capabilities and proxy forces poses a persistent threat. The Islamic Revolutionary Guard Corps Qods Force leads Iranian power projection through a complex network of state and nonstate partners and militant proxies. Iran's conventional military emphasizes niche capabilities and guerilla-style tactics against its technologically advanced adversaries. Its substantial arsenal of ballistic missiles is designed to overwhelm U.S. forces and our partners in the region. Its swarms of small boats, large inventory of naval mines, and arsenal of antiship missiles can severely disrupt maritime traffic in the Strait of Hormuz—a strategic chokepoint critical to global trade. Each of these forces are becoming increasingly survivable, precise, and responsive.

In more recent years, with the conflicts in Syria and Iraq, Iran has taken nascent steps toward developing a limited expeditionary capability. Iran's conventional forces are now in the regional power projection game as well. At the same time, modern conventional capabilities will be open to Iran for the first time since the revolution, as the UN arms embargo is scheduled to end by October 2020. With these opportunities, we could begin to see significant changes in Iranian strategy and capabilities, as Iran becomes a more traditional military force.

As Tehran expands its capabilities and role as both an unconventional and conventional threat in the Middle East, it is more important than ever that we understand Iran's military power and the threat it poses to our interests, our allies, and our own security.



Robert P. Ashley Jr

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Image Source: AFP

Iranian clerics watch a Shahab 3 MRBM launch in 2006.

Introduction/Historical Overview

Persia, as Iran was known before 1935, was one of the great empires of the ancient world. Its military history dates back more than 2,500 years. The country in its present form—the Islamic Republic of Iran—was established in 1979 after the Islamic Revolution. Iran is a theocratic republic with a supreme leader appointed for life as head of state and the highest-ranking political, military, and religious authority under the principle of *velayat-e faqih* (rule of the Islamic jurist), a philosophy in Shia Islam reinterpreted by Iran's first supreme leader, Ayatollah Ruhollah Khomeini, that calls for clerical oversight of elected institutions.

1921–1979: The Shah's Army

The modern Iranian military originated in the early 1920s after Reza Khan, a general in the Persian Cossack Brigade, helped lead a coup to strengthen the power of the Persian *shah* (king), Ahmad Shah Qajar. In 1921, Reza was made the commander of all of Iran's disparate military elements, which he combined to form the basis of the modern Iranian military, the *Artesh* ("army" in Persian). As a top priority for Ahmad Shah, the Imperial Iranian Armed Forces then began a long-term effort to grow

and modernize.[2,3] After becoming prime minister, Reza Khan orchestrated his own appointment as shah in 1925. Renamed Reza Shah Pahlavi, the new king enacted a secular civil code and set out on a broader modernization of the country, to include the military.[4]

Events throughout the 20th century contributed to Iran's long-held suspicion of foreign powers. During World War II, British and Soviet forces invaded Iran to secure oil resources and protect Allied supply lines to the Soviet Union. Although Iran was officially neutral in the war, the Allied powers considered Reza Shah to be too close to Nazi Germany and forced him to abdicate, installing his son—Mohammad Reza Pahlavi—as shah in 1941. A decade later, the elected prime minister, Mohammad Mossadegh, nationalized the British-owned Iranian oil industry. Britain imposed an economic embargo, and a power struggle between the shah and Mossadegh ensued. After the shah fled Iran, the United States and the United Kingdom in 1953 organized a successful coup—called Operation AJAX—with support from Iranian royalists to overthrow Mossadegh and strengthen the power of the shah.[5,6]



Iranian protestors during the 1953 coup.

Image Source: AFP

After the 1953 coup, Mohammad Reza Shah accelerated efforts to transform Iran into a Westernized and dominant regional power. One of his top priorities was to build a strong military, leveraging close ties to the United States during the Cold War. Funded by increasing oil revenue, the Artesh acquired a wide range of advanced weapon systems during the 1960s and 1970s, primarily from the United States. Tehran's procurement of American arms included F-4, F-5, and F-14 fighter aircraft; AH-1 Cobra attack helicopters; M60 tanks; HAWK and SM-1 surface-to-air missiles (SAMs); and TOW antitank guided missiles (ATGMs). Iran also purchased British tanks and corvettes, French patrol craft, and Soviet armored vehicles.[7,8,9,10,11]

By the mid-1970s, Tehran became the largest customer of U.S. military equipment. At the time of the revolution, its military was one of the most capable in the region, with more than 400,000 personnel. However, Iran still required extensive U.S. training and technical support to operate and maintain its advanced military equipment. Iran ordered other advanced systems from Western suppliers before the revolution—including F-16s, F-18s, frigates, destroyers, and submarines from the United States—but these were never delivered.[12]

The Iranian military was largely unproven in combat until the mid-1970s, when the shah deployed Artesh forces to Oman alongside the British at the request of the sultan to help quell an insurgency. Iran first deployed special forces to Oman in late 1972, followed by a battalion of paratroopers in 1973. By 1974, the Imperial Iranian Task Force numbered more than 3,000 troops, with artillery, heli-

copter, fighter aircraft, air defense, and naval support. Tehran rotated its deployments every 3 months to maximize the number of returning personnel with combat experience. By the withdrawal of most Iranian forces after 1975, some 15,000 Iranian troops had served in Oman with more than 500 killed in action.[13,14]

Under Mohammad Reza Shah's rule, Iran became increasingly autocratic. Public disapproval for the regime grew, furthered by an economic recession and public perceptions of the shah as a corrupt U.S. puppet.[15] In the late 1970s, widespread protests representing most segments of Iranian society increased across the country. By 1979, the unrest grew into a revolution. Popular Shia cleric Ayatollah Ruhollah Khomeini, who had been in exile, had become the central figure of the revolution and opposition to the shah, who then fled Iran in January 1979. Khomeini returned to Tehran on 1 February and called for nationwide demonstrations. Clashes between armed opposition groups and government forces broke out. Ten days later, the Artesh declared that it would remain neutral to prevent further casualties, effectively ending the revolution with Khomeini in power.[16]



Ayatollah Ruhollah Khomeini returns to Iran from exile on 1 February 1979.

Image Source: AFP

1979–Present: The Guardians of the Revolution

In a referendum on 1 April 1979, Iranians approved a new constitution establishing a theocratic republic based on *velayat-e faqih* with Khomeini as supreme leader, ending 2,500 years of monarchical rule. On 5 May, Khomeini established the Islamic Revolutionary Guard Corps (IRGC), consolidating various militias that had formed during the revolution into a single force loyal to the new regime, in parallel with the Artesh.[17] During the first few years after the revolution, fearing internal unrest stemming from old-regime allegiances and antirevolutionary activity, the regime conducted a series of purges through arrests, trials, and executions that affected as many as 4,500 military personnel and nearly 6,000 activists, effectively eliminating any remaining opposition.[18,19]

On 4 November 1979, a group of Iranian students loyal to Khomeini took over the U.S. Embassy in Tehran, taking 52 Americans hostage and leading the United States to sever diplomatic relations with Iran. The crisis lasted 444 days before the regime returned the hostages to the United States. On 24 April 1980, an attempted rescue by U.S. Special Forces—called Operation EAGLE CLAW—failed when two aircraft collided during a sand storm at a staging area in the Iranian desert, killing eight U.S. servicemembers.

The Islamic Revolution and the hostage crisis left Iran diplomatically isolated and militarily weakened. Iran also lost access to tens of thousands

An Ideological Army

In establishing and equipping the defense forces of the country, it shall be taken into consideration that faith and ideology are the basis and criterion. Therefore, the Army of the Islamic Republic of Iran and the Revolutionary Guards Corps will be formed in conformity with the above objective, and will be responsible not only for protecting and safeguarding the frontiers but also for the ideological mission, that is, Jihad, for God's sake and struggle for promoting the rule of God's law in the world ("And prepare against them whatever you are able of power and of steeds of war by which you may terrify the enemy of Allah and your enemy and others besides them whom you do not know but whom Allah knows." [Quran 8:60]).

-The Iranian Constitution, Preamble[20]

of foreign technicians to support the advanced military equipment it had purchased under the shah, while deliveries for U.S. and British spare parts were canceled under an arms embargo. Desertions and purges drained roughly 40–60 percent of the Artesh's manpower, leaving the military with a severe shortage of trained personnel and professional leadership.[21]



Iranians students scale the wall of the U.S. Embassy in Tehran on 4 November 1979.

Image Source: AFP

Saddam Hossein sought to capitalize on Iran's post-revolutionary turmoil after years of territorial disputes and competition for regional influence. On 22 September 1980, Iraq invaded Iran. Saddam justified the attack as necessary to prevent Iran from exporting the revolution and overthrowing his regime, which Iranian leaders had advocated.

Initially disorganized and poorly trained, the IRGC was forced to begin to professionalize to repel the Iraqi invasion, which the diminished Artesh was unable to do on its own. The IRGC and Basij, a volunteer paramilitary reserve force, relied on guerrilla-warfare tactics and later used extremely costly human wave attacks along the front.[22,23] By June 1982, Iran had pushed back Iraqi forces and recovered nearly all of its lost territory. Saddam proposed a ceasefire, but Khomeini rejected the offer. Tehran's goals had shifted from liberating captured land to overthrowing Saddam and expanding the revolution. The next month, Iran launched a counterattack into Iraq and generally remained on the offensive for the remainder of the war.[24]

Major Iran-Iraq War Events

1805-17889

1980	**Sep:** Iraq invades Iran **Nov:** Iraq's first use of chemical weapons
1981	
1982	**Jul:** Iran invades Iraq **Oct:** Iraq's first use of ballistic missiles
1983	
1984	**Feb:** Beginning of the War of the Cities **Mar:** Iraq begins attacks on Gulf shipping (beginning of the Tanker War) **May:** Iran begins attacks on Gulf shipping
1985	**Mar:** Iran's first use of ballistic missiles
1986	
1987	**Jul:** UN ceasefire (UNSCR 598); Operation EARNEST WILL starts
1988	**Apr:** USS *Samuel B. Roberts* mined; Operation PRAYING MANTIS **Jul:** Iran Air Flight 655 shot down by USS *Vincennes*; Iran accepts UN ceasefire **Aug:** War ends

IRGC-Artesh Tension

In the aftermath of the revolution, there was considerable tension between the IRGC and Artesh at the outset of the war. The Artesh suffered from leadership purges and was distrusted by the new regime and the IRGC. By the end of the war, however, the Artesh had demonstrated its worth and loyalty to the regime. Although today both militaries provide essential security functions for Iran and coordinate regularly, some rivalry remains, resulting from their uneven access to resources, varying levels of influence with the regime, and inherent overlap in missions and responsibilities.[25]

Iran struggled to contend with the deadly facets of modern warfare, including chemical weapons and ballistic missiles, which Baghdad used extensively throughout the war.[26] Iraq reportedly began using chemical weapons as early as November 1980. Estimates of the total casualties resulting from Iraqi chemical weapons use vary widely, ranging from about 7,500 to more than 25,000, with tens of thousands more injured.[27,28] Iraq first began



Iraqi soldiers deface an image of Iranian Supreme Leader Khomeini in 1988 near the end of the Iran-Iraq War.

Image Source: AFP

using Soviet-supplied Scud missiles in October 1982 after Iran invaded Iraqi territory. By 1984, Iraq had expanded its attacks on population centers, using strategic air raids, artillery shelling, and Scud missiles, in what became known as the "War of the Cities."[29] Iran purchased its own Scuds from Libya and North Korea for use against Iraqi population centers, launching its first ballistic missiles in March 1985. By the end of the war, however, Iran had acquired and launched significantly fewer missiles than Iraq.[30]

Starting in 1984, attacks on merchant shipping and oil infrastructure in the Persian Gulf—called the Tanker War—became an increasingly significant part of the conflict. In 1987, the U.S. Navy began to escort reflagged Kuwaiti oil tankers as part of Operation EARNEST WILL. On 14 April 1988, the USS *Samuel B. Roberts* was struck by an Iranian naval mine. In response 4 days later, the United States launched Operation PRAYING MANTIS against Iranian naval forces, sinking several Iranian vessels. On 3 July 1988, the USS *Vincennes* shot down Iran Air Flight 655, mistaking the aircraft for an attacking Iranian F-14. All 290 passengers and crew were killed. Tehran still believes the United States deliberately shot down the civilian airliner.[31,32]

By mid-July 1988, Iraqi troops had driven back into Iranian territory, and Tehran had grown increasingly weary of the war's progress. Believing they lacked the support and resources to defeat Saddam, military leaders convinced the supreme leader of the need to end the war. On 20 July, Khomeini accepted a UN ceasefire resolution with great reluctance, stating publicly the decision was more painful than drinking from a "poisoned chalice." The war officially ended on 20 August 1988 with the ceasefire observed across the front.[33]



U.S. naval forces escort oil tankers in the Persian Gulf in 1987 during the Tanker War.

Image Source: AFP

The Iran-Iraq War—which Iran refers to as the "Imposed War" and the "Sacred Defense"—lasted 8 years with more than 200,000 Iranian troops and civilians killed.[34,35] Although devastating for Iran, it helped solidify popular support for Khomeini's new regime.[36] The war had a significant psychological impact on the future of the Iranian military and Tehran's security policy. Tehran viewed Western support for Saddam as proof of efforts to counter the Islamic Revolution. Syria was one of the few countries to support Iran during the war, establishing a key relationship that has persisted for decades. Heavy military and civilian losses, Saddam's use of chemical weapons and ballistic missiles, the West's embargo of Iran and support for Iraq, and military engagements with U.S. forces in the Persian Gulf all led the regime to emphasize asymmetric capabilities and reinforce the necessity of self-reliance for decades to come. The war contributed to Tehran's belief in the necessity of working with Shias, disenfranchised Sunnis, and nonaligned countries as an "Axis of Resistance" against the West.[37,38]

Since the end of the Iran-Iraq War, Iran has adapted its military thinking and approach to modern conflict. During the 1990s, Iran expanded its outreach to Shia communities and

other potential allies throughout the Middle East—particularly Hizballah and Syria. Tehran established the IRGC Qods Force (IRGC-QF), the clandestine external operations element of the IRGC, in 1990 to better facilitate these networks and strengthen its covert presence in the Middle East and beyond. As Iran's primary conduit of support and guidance to nonstate partners, the IRGC-QF provides training, funding, and equipment for militias and political groups with common anti-Western ideologies and objectives.

Evolution of the Iranian Military

1805-17887

Year	Event
1921	Artesh established
1923	Imperial Iranian Ground Force (IIGF) established
1924	Imperial Iranian Air Force (IIAF) established
1932	Imperial Iranian Navy (IIN) established
1979	IRGC established; Imperial Iranian Armed Forces become Islamic Republic of Iran Ground Force (IRIGF), Air Force (IRIAF), and Navy (IRIN)
1980	Basij formally established
1981	Basij incorporated into the IRGC
1985	IRGC split into Ground Force (IRGCGF), Air Force (IRGCAF), and Navy (IRGCN)
1990	IRGC Qods Force (IRGC-QF) established
2007	Basij comes under IRGC command
2008	Khatemolanbia Air Defense Headquarters (KADHQ) established from IRIAF
2009	IRGCAF renamed IRGC Aerospace Force (IRGCASF); some Basij units integrated with IRGCGF
2019	KADHQ elevated to Artesh HQ; Artesh air defense force renamed Islamic Republic of Iran Air Defense Force (IRIADF)

Tehran also invested heavily in advancing its conventional weapons capabilities, particularly ballistic missiles, to better prepare itself against future Iraqi attacks. Iran acquired significant assistance from other countries, including North Korea and China, to establish domestic production capabilities for major weapons programs. In the late 1980s, Iran also established a nuclear weapons program, which it halted in the early 2000s.[39]

After the U.S. invasions of Afghanistan in 2001 and Iraq in 2003 and the 2006 Israel-Hizballah War, Tehran began to adjust its military doctrine to better deter and counter the threats from technologically advanced Western militaries. Tehran concentrated on equipping its armed forces with niche capabilities emphasizing asymmetric tactics. The U.S. presence in the region created a sense of encirclement in Tehran, which continued to believe that Washington ultimately sought to overthrow the regime. During the Iraq War, Iran established strong ties with Shia militia groups, some of which have received Iranian financial backing for decades. Using Iranian-provided weapons, these groups were responsible for at least 603 U.S. personnel killed in Iraq between 2003 and 2011.[40,41]

Since the Arab Spring, the start of the Syrian civil war, and the rise of the Islamic State of Iraq and ash-Sham (ISIS), Tehran has become increasingly involved in regional conflicts—particularly in Syria, Iraq, and Yemen—as it responds to new security threats and seeks to strengthen its position as a regional power. Iran has committed extensive resources and deployed military forces to support key partners in these struggles, adapting its long-standing model of proxy warfare to incorporate a more conventional application of military power.[42]

In 2015, Tehran agreed to the Joint Comprehensive Plan of Action (JCPOA), which placed restrictions on its nuclear program in exchange for sanctions relief. Although Iran saw some improvement in its economy and a corresponding increase in government spending, including the defense budget, the benefits of integration into the world economy that Tehran and the Iranian public expected after the JCPOA never fully materialized. In May 2018, the United States withdrew from the JCPOA and began reimposing unilateral sanctions on Iran.

In April 2019, the U.S. State Department formally designated the IRGC as a foreign terrorist organization (FTO) and announced it would not renew exemptions for select countries to import Iranian oil.[43,44] In response to these actions, Iran began its own counter-pressure campaign, which has included gradually exceeding some of the nuclear-related limits stipulated in the JCPOA and conducting provocative maritime actions and unconventional warfare attacks against U.S. allies and interests. Amid this tension, Iran also shot down a U.S. unmanned aerial vehicle (UAV) and seized a British oil tanker.[45]



Image Source: AFP

IRGC soldiers during the September 2018 Holy Defense Week parade in Tehran marking the anniversary of the outbreak of the Iran-Iraq War.

National Military Overview

Iran's armed forces consist of two separate, parallel militaries—the Artesh, or regular forces, and the IRGC. The Artesh, which long predates the revolution, focuses on defense against external threats; the mission of the IRGC, formed from armed militias during the revolution, is to defend the regime and its Islamic system of government from any threat, foreign or domestic. Iran's national police force, the Law Enforcement Force (LEF), is also considered part of the armed forces.

The Iranian Armed Forces at a Glance

Services	***Artesh:*** Ground Force, Navy, Air Force, Air Defense Force ***IRGC:*** Ground Force, Navy, Aerospace Force, Qods Force, Basij ***LEF***
Personnel	***Active military:*** Approximately 600,000 ***Reserve:*** Approximately 450,000 active reserve, at least 500,000–1 million inactive reserve ***LEF:*** Approximately 200,000–300,000
Recruit Base	Universal male conscription (18–24 months), some volunteer
Equipment Profile	Mostly legacy Western, Chinese, and Soviet-era weapon systems, with some newer domestically produced systems
Core Strengths	Large ballistic missile inventory, littoral naval capabilities, and unconventional partners and proxies abroad
Key Vulnerabilities	Dual military structure and lack of access to modern technology and weapons

Iranian Military Structure and Size Estimates

1805-17887

Islamic Revolutionary Guard Corps (IRGC)		Regular Forces (Artesh)	
IRGC Ground Force (IRGCGF)	150,000	Islamic Republic of Iran Ground Force (IRIGF)	350,000
IRGC Navy (IRGCN)	20,000	Islamic Republic of Iran Navy (IRIN)	18,000
IRGC Aerospace Force (IRGCASF)	15,000	Islamic Republic of Iran Air Force (IRIAF)	37,000
IRGC Qods Force (IRGC-QF)	5,000	Islamic Republic of Iran Air Defense Force (IRIADF)	15,000
Basij (Reserves)	450,000	**Total:**	**420,000**
Total (excl. Basij)	**190,000**		
Total (incl. Basij)	**640,000**		
Total Military (Active): 610,000			
Total Military (incl. Reserves): 1,060,000			

Note: Basij number only includes estimated active reserve personnel; Iran may be able to mobilize an additional 500,000 to 1 million Basij in wartime.

Threat Perceptions

Iran views the United States as its greatest enduring threat and believes the United States is engaged in a covert and "soft war" to subvert the regime, undermining what Iran perceives as its rightful place as a regional power.[46,47,48] Supreme Leader Ayatollah Ali Khamenei maintains a deep, long-standing distrust of U.S. intentions.[49] Many regime elites view regional dynamics through the lens of perceived U.S. aggression, leading some to adopt the extreme view that the United States created ISIS in part to weaken Iran and its allies.[50] Distrust of the United States predates the regime's founding, dating back to the 1953 coup against Prime Minister Mossadegh that returned the shah to power.[51]

Iran has focused on preparing and equipping its military forces for defense against air attack and ground invasion by a technologically superior adversary, primarily the United States. The U.S. invasions of Iraq and Afghanistan in the early 2000s and international scrutiny of Iran's nuclear program raised Iran's fears of encirclement and potential Western attack.[52,53] Tehran recognizes that it cannot compete with the United States on a conventional level and has prioritized the development of defensive capabilities that emphasize asymmetric tactics to protect the country and the regime.[54]

In recent years, Tehran's immediate perceived threats have shifted to those coming from regional state and nonstate actors. Iran probably views Israel, Saudi Arabia, and Sunni extremist groups, such as ISIS, as its next most dangerous threats because of their immediacy and proximity to Iran's territory, allies, and regional influence.[55] Iran's expanding regional activities have only exacerbated these views. The growth in militant Sunni extremism, particularly ISIS, and Iran's perception of its regional adversaries' growing military capabilities has prompted Tehran to adjust some of its military modernization priorities.[56,57] Iran's latest national development plan reflects this shift in threat perceptions by emphasizing a broader range of conventional capabilities than previous plans.[58,59]



An anti-U.S. mural on the wall of the former U.S. Embassy in Tehran.

Image Source: AFP

National Security Strategy

Tehran's national security strategy aims to ensure continuity of clerical rule, maintain stability against internal and external threats, secure Iran's position as a dominant regional power, and achieve economic prosperity.[60] Iran has developed its security and military strategies based on these four enduring strategic objectives.

- **Ensure Continuity of Clerical Rule.** The supreme leader's position is based on the popular acceptance of *velayat-e faqih*. To ensure the regime's continued legitimacy with the Iranian populace, Tehran attempts to control much of the domestic political, social, and cultural environment and promote its interpretation of Islamic ideology.[61,62]
- **Secure the Nation From Internal and External Threats.** The regime uses its military and security capabilities to counter internal threats from political and ethnic opposition movements and terrorist groups and to prevent neighboring states' instability from spilling over or causing violence in Iran.[63] The military defends Iranian territory from foreign adversaries—including perceived existential threats, such as the United States, and regional rivals, such as Israel and Saudi Arabia—and provides support to allies and partners to counter regional threats.[64]
- **Become a Dominant Regional Power.** Tehran aspires to lead a stable regional order in which it has dominant influence. In Iran's vision for the region, its allies remain intact, the influence of the United States and U.S. regional partners is degraded, and Sunni extremist groups are defeated.[65,66,67] In pursuit of these goals, Iran provides extensive military, advisory, and financial assistance to allies and partners, seeking to protect its regional interests and pressure adversaries.
- **Attain Economic Prosperity.** Domestically, President Hasan Fereidun Ruhani's priority is to achieve national economic prosperity by reducing subsidies to the populace, curbing corruption, reforming the financial sector, and attracting foreign investment.[68,69,70] Tehran aims to balance foreign investment and partnerships with the priority it places on economic self-sufficiency, in part to reduce the effects of U.S. and multilateral sanctions.[71,72,73]

Iran remains committed to modernizing its military, forging new partnerships, and building the capacity of its partners across the region—including designated FTOs—all while balancing a desire to benefit from integrating into the global economic system. Despite some internal instability, Iranian military and security forces have also proven able to manage public unrest and low-level insurgencies from several ethnic opposition movements.[74,75]

Stability Issues

Since the 1979 revolution, the regime has regularly cracked down on dissent to maintain political stability. Iranian political and ethnic opposition groups are largely localized and lack unity, posing little threat to the regime. Iran's internal stability continues to be threatened by a growing schism between the country's leaders, dominated by military and clerical elites, and the common people. The past 40 years have seen a growth in income inequality, increased IRGC political influence and control of key economic sectors, sustained sectarian and ethnic tension, violent suppression of dissent and reformists, persistent gender inequality, and tension stemming from the military's involvement in regional conflicts.

In 2009, after the disputed reelection of conservative President Mahmoud Ahmadinejad, a loosely organized opposition called the Green Movement emerged with large-scale protests demanding democratic reforms. The demonstrations marked the country's most significant unrest since the revolution. Bolstered by the Internet, hundreds of thousands of protesters turned out across the country. The government responded by ordering security services to crack down, which resulted in dozens of deaths, hundreds of arrests, restricted access to social media, and the closure of several newspapers. The regime quelled the unrest and nearly eliminated the Green Movement.[76]

Between December 2017 and January 2018, small incidents of civil disobedience converged into widespread public protests, the largest unrest Iran has faced since 2009. Some protestors challenged Iran's foreign policy—including its involvement in regional conflict and support to proxy groups—but most focused on economic and social issues. Elected in 2013, President Ruhani promised increased financial benefits and economic growth, but these have not translated into an improved standard of living for everyday Iranians. While oil output had risen before the reimposition of U.S. sanctions, significant economic growth did not follow, and domestic prices for both food and fuel increased.[77]



Iranian protestors after the disputed 2009 presidential elections.

Image Source: AFP

Some longstanding opposition groups, mostly originating from minority ethnic and religious groups, continue to challenge Iran's internal security. Along the western border, the regime faces several militant Kurdish opposition groups—including the Kurdish Democratic Party of Iran (KDPI) and the Free Life Party of Kurdistan (PJAK)—which advocate for increased autonomy and the right to Kurdish self-determination. Armed opposition from PJAK has been especially violent, resulting in dozens of Iranian deaths annually since 2005.[78] Iran also faces periodic violence from Baluchi militants in southeastern Iran along the Pakistani border. The most prominent of these groups, Jaish ul-Adl (JAA), periodically attacks Iranian military facilities, border posts, and security patrols and occasionally takes military and security personnel hostage.[79,80] JAA hampers Iran-Pakistan relations, with Tehran accusing Islamabad of failing to curb Baluchi militants operating from Pakistani soil.[81] The Iranian military conducts counterinsurgency campaigns against the Kurdish and Baluchi militants in these regions on a nearly annual basis.

The most well-known group opposed to the regime is the People's Mujahedeen of Iran

(MEK). The MEK, founded in 1965 by Muslim students advocating a combination of Marxist communism and Islamist ideology, is an Iranian political-militant organization in exile that proposes the overthrow of the Iranian regime to establish itself as a new government. After initially supporting the 1979 revolution, the MEK fought on behalf of Saddam late in the Iran-Iraq War and was responsible for a series of bombings and assassinations in the 1990s and early 2000s. Widely unpopular in Iran, the MEK remains one of the regime's foremost internal security concerns. Formerly designated as an FTO by the United States, the Iranian government still considers the MEK a terrorist group.[82]

External Defense Relations

Tehran maintains defense and security ties to both state and nonstate actors to project power and support Shia groups and Shia-led governments in the Middle East. Iran relies on its regional partnerships to help counter perceived threats from Sunni extremist groups, adversarial states, and Western military presence in the region. Iran refers to its efforts to build a regional network to counter Israeli and Western influence as the "Axis of Resistance," which includes Iran, Syria, Hizballah, Iraqi Shia militias, the Huthis, and some Palestinian militants. Beyond these closer allies, Tehran seeks to cultivate relations with other countries; Iran is also a member of the Nonaligned Movement and has observer status with the Shanghai Cooperation Organization.

Particularly in recent years, Tehran has committed extensive resources and deployed military personnel to support key partners facing internal conflicts. Since at least 2012, Iran has escalated its involvement in the Syrian civil war to include providing arms, training, advisers, and select combat personnel to support the Syrian regime. Since at least 2014, Iran has also provided direct military assistance—including IRGC advisers, training, and materiel support—to Iraqi Shia militias to help combat ISIS, which Tehran views as a critical national security threat, and to strengthen its influence in Iraq.

Iran maintains strong defense ties to Hizballah in Lebanon—its most significant and oldest nonstate partner and a core member of Tehran's "Axis of Resistance"—and provides support to some Palestinian groups in an attempt to pressure Israel. Iran also provides advanced

The "Axis of Resistance"

Iran uses the term "Axis of Resistance" to describe its loose confederation of like-minded state and nonstate actors across the Middle East to counter Western influence. These partners, proxies, and allies include the Asad regime in Syria, Hizballah in Lebanon, Shia militias in Iraq, the Huthis in Yemen, Bahraini militants, and some Palestinian groups. Most of these are Shia entities, but select Sunni groups—like HAMAS—also align with Iran on key issues. The axis helps Tehran extend its influence in the region and provides a degree of strategic depth for Iran.[83]

weapons support to the Huthis in Yemen and calibrated support to Shia militants in Bahrain and the Taliban in Afghanistan. The IRGC-QF, the IRGC's external operations element, is Iran's primary conduit of support and guidance to these nonstate partners and proxies.[84,85]

Tehran maintains particularly close military-to-military ties with Syria and Iraq and has signed basic military cooperation agreements with Afghanistan, Belarus, China, Oman, Russia, South Africa, Sudan, and Venezuela.[86,87,88,89,90,91,92,93] Iran has also held discussions on defense and security issues with a wider range of countries, including Azerbaijan, Bolivia, Djibouti, India, Italy, Kazakhstan, Lebanon, Pakistan, Qatar, Tanzania, Turkey, and Turkmenistan.[94,95,96,97,98,99,100,101,102,103,104,105] Djibouti and Sudan have since severed diplomatic ties with Iran. Tehran has also purchased military equipment from Russia, China, North Korea, Belarus, and Ukraine.[106]

Military cooperation between Russia and Iran has grown significantly in recent years, despite Tehran's uncertainty about Moscow's long-term regional objectives.[107] Iran and Russia have cooperated to support Asad's regime in Syria since at least 2015. Iran has briefly allowed Russian combat aircraft to use its Hamadan Airbase as a stopover to launch strikes in Syria, marking the first time Tehran has permitted a foreign military to use its territory since the Islamic Revolution. Iran also seeks to procure Russian military hardware. In 2016, it completed its high-profile purchase of the Russian SA-20c air defense system, which provided Iran with its first capability to defend against a modern air force.[108]



In 2011, the Iranian Navy transited the Suez Canal for the first time since the Islamic Revolution.

Image Source: AFP

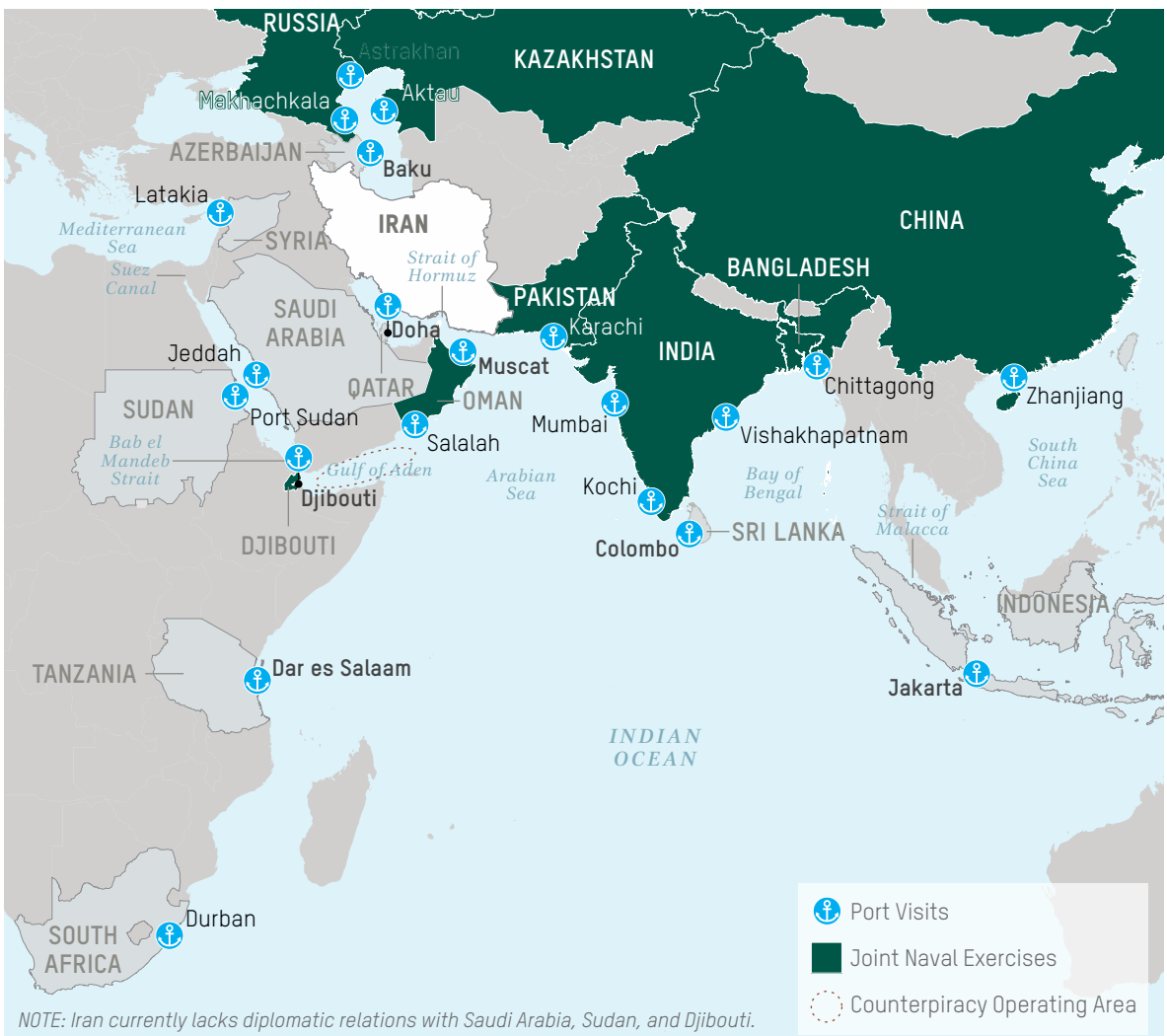
The Iranian military is also increasing its defense diplomacy efforts, particularly through near-continuous naval deployments beyond its immediate neighbors. Since 2009, Iran has sent small naval groups to "show the flag" through a series of port calls overseas and counterpiracy operations in the Gulf of Aden. Intended to enhance its soft power, Iran's use of naval diplomacy has demonstrated its capability to conduct out-of-area operations increasingly farther from Iranian shores, extending from the Mediterranean Sea and Bab al-Mandab Strait in the west to the Indian Ocean and Strait of Malacca in the east.

In 2011, the IRIN made its first transit through the Suez Canal since the Islamic Revolution, followed by its first ever port visits to China in 2013 and South Africa in 2016. Sometimes in conjunction with these port calls, Iran has conducted basic joint naval exercises—such as search and rescue drills—with China, Djibouti, India, Italy, Oman, Pakistan, and Russia.[109,110,111,112,113] Iran is also a member of the Indian Ocean Naval

Symposium (IONS), a 35-member regional naval cooperation forum. Tehran participated in the IONS's inaugural International Maritime Search and Rescue Exercise in Bangladesh in 2017 and hosted the sixth biannual IONS conference in April 2018 in Tehran.[114,115]

Iranian Port Visits and Joint Naval Exercises

1805-17885



NOTE: Iran currently lacks diplomatic relations with Saudi Arabia, Sudan, and Djibouti.

Graphic Source: DIA, D3 Design

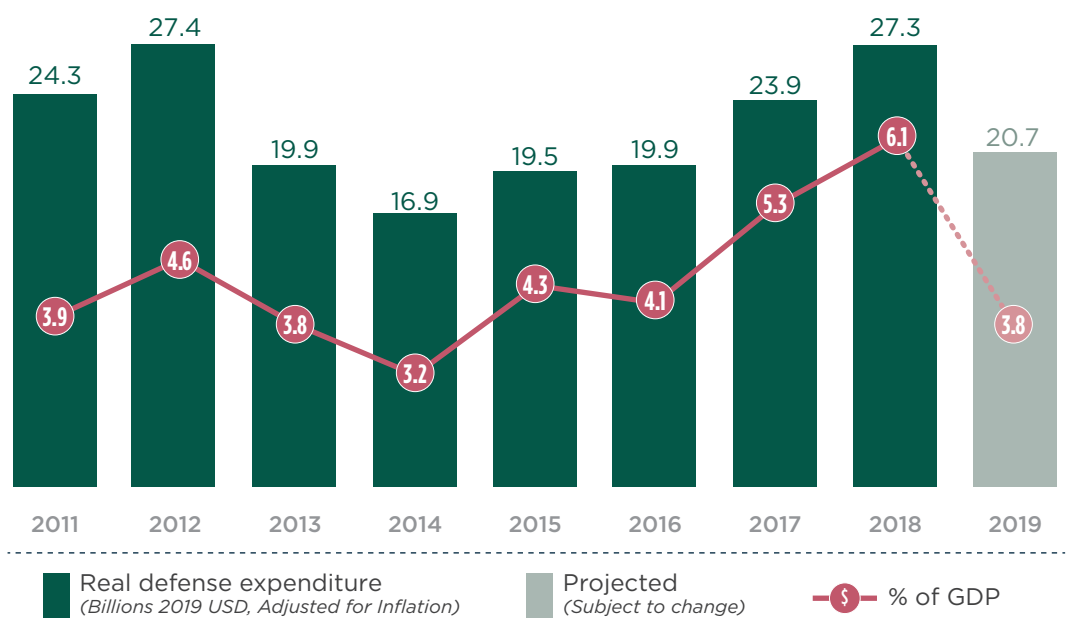
Defense Budget

Following a significant increase in Iranian defense spending from 2014 to 2018 after the implementation of the JCPOA, Iran's security forces have experienced a funding decrease in 2019. Key drivers of this defense budget decrease include the reimposition of U.S. oil and banking sanctions, the depreciation of the Iranian rial, and chronic economic mismanagement. Iran's official defense budget for 2019 is approximately $20.7 billion, roughly 3.8 percent of gross domestic product (GDP), as passed by the Iranian Majles. This total includes funding for the major components of Iran's security apparatus, including the IRGC, Artesh, and LEF, as well as the Armed Forces General Staff (AFGS), the Ministry of Defense and Armed Forces Logistics (MODAFL), and security forces pensions. The decline in funding for 2019 is similar to the decrease following the implementation of multilateral oil and financial sanctions in 2012. Iran's current defense funding may face further cuts as Iranian oil export revenue continues to decline.

Although it is smaller in size, the IRGC receives a greater proportion of the defense budget than the Artesh. In 2019, Iran allocated 29 percent of the defense budget to the IRGC, compared with 12 percent for the Artesh.

Official Iranian Defense Expenditures 2011–2019

1805-17889



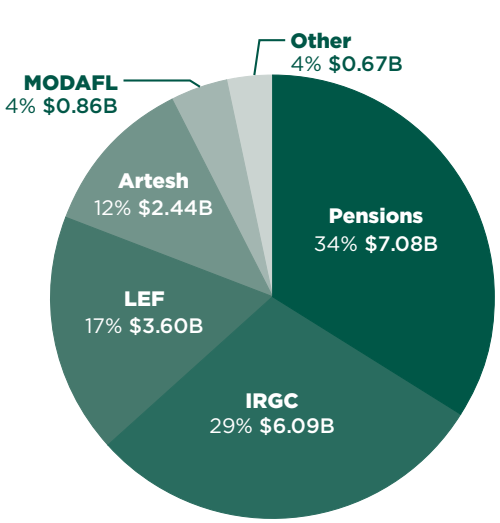
The government allocated 34 percent of the budget to pensions for all military personnel, and law enforcement personnel received about a third of the budget.[116,117,118] Iran also distributes funding to its many partners and proxies, expenditures not fully accounted for in the official budget. Between 2012 and 2018, Iran provided more than $16 billion to the Syrian regime, Hizballah, Iraqi Shia militias, the Huthis, and Palestinian groups.[119]

Tehran has a variety of off-budget sources of funding, making it difficult to accurately estimate the true size and scope of Iranian defense spending. The supreme leader can authorize transfers to defense and security organizations from the National Development Fund, Iran's reserve fund, as it reportedly has done to support military activities in Syria.[120] Moreover, the IRGC runs numerous private companies—most notably the wide-ranging *Khatemolanbia* ("seal of the prophets") Construction Headquarters—and exploits its far-reaching political and social influence to raise additional revenue. The IRGC and IRGC-QF can also gain extra income through smuggling and other illicit activities in the region.[121,122,123,124]

Iran's new 5-year national development plan, released in July 2017, emphasizes a broader range of conventional capabilities than past plans. The plan continues to prioritize missiles and naval forces, but it also emphasizes air power, including the first public reference to offensive air capabilities in an Iranian strategic document. The plan also provides new focus on electronic warfare (EW) capabilities.[125]

Official 2019 Iranian Defense Spending

1805-17889



Nuclear Program

Iran's overarching strategic goals of enhancing its security, prestige, and regional influence have led it to pursue nuclear energy and the capability to build missile-deliverable nuclear weapons, if it chooses to do so.

Iran has no nuclear weapons and, under the JCPOA, agreed not to seek, develop, or acquire nuclear weapons. The JCPOA limits Iran's uranium enrichment capabilities until at least 2026 and requires Iran to redesign its Arak reactor, making it more difficult to produce plutonium for weapons. Without a sufficient source of weapons-usable fissile material, Iran cannot produce a nuclear weapon.

Iran's interest in nuclear technology dates back to the 1950s, when it began receiving assistance through the U.S. Atoms for Peace program, which later included the Tehran Nuclear Research Center and a 5-megawatt-thermal research reactor. Iran signed the Nonproliferation Treaty (NPT) as a nonweapons state and ratified the agreement in 1970. In the mid-1970s, Iran unveiled ambitious plans to expand the nuclear power program. These plans, however, did not come to fruition because of the 1979 revolution.

In the late 1980s, Iran established an undeclared nuclear program, managed through the Physics Research Center (PHRC) and overseen through a scientific committee by the Defense Industries Education Research Institute. The PHRC was subordinate to MODAFL. In the late 1990s, the PHRC was consolidated under the "Amad Plan," Iran's effort to develop a nuclear weapon. Iran's Project 111 was an attempt to integrate a spherical payload into a Shahab 3 missile reentry vehicle. However, Iran halted its nuclear weapons program in 2003 and subsequently announced the suspension of its declared uranium enrichment program. Iran also signed an Additional Protocol to its International Atomic Energy Agency (IAEA) Safeguards Agreement in 2003.

The halt was primarily in response to increasing international scrutiny resulting from the exposure of Iran's previously undeclared nuclear work. After this halt, and in line with its history of poor transparency, Iran continued its efforts to develop uranium enrichment technology with gas centrifuges and constructed an undeclared uranium enrichment plant near Qom, where it began producing near-20-percent enriched uranium in mid-2011. The IAEA also reported in 2011 that Iran may have conducted some dual-use research relevant to nuclear weapons after the 2003 halt. In late 2011, a Department of State compliance report found Iran to be in violation of obligations under the NPT because Iran's past nuclear activities and its failure to report ongoing activities were contrary to its Safeguards Agreement. That same year, the IAEA began an effort to clarify issues surrounding Iran's lack of transparency dating back to 2002, noting that by failing to declare some nuclear activities, including the construction at Qom, Iran was not implementing the Additional Protocol. In 2015, the IAEA concluded that it had no further indications of undeclared work.



Then-President Mahmoud Ahmadinejad tours the Natanz Uranium Enrichment Facility in 2008.

Image Source: AFP

In April 2015, a framework was announced to limit Iran's nuclear program that built on the interim Joint Plan of Action. Under the deal, Iran would commit that under no circumstances would it seek, develop, or acquire nuclear weapons, and it would limit its enrichment program and redesign a heavy-water reactor near Arak; in exchange, all nuclear-related sanctions against Iran would be suspended. On 14 July 2015, Iran and the P5+1 (the five permanent members of the UN Security Council plus Germany) finalized the JCPOA, whereby Iran agreed to curtail its nuclear program significantly in exchange for sanctions relief. On 16 January 2016, the IAEA reported that Iran had taken the technical steps required to meet its Implementation Day obligation. As long as Iran adheres to the agreement, the JCPOA limits the pathways to a nuclear weapon and hampers Iran's ability to conduct activities that could contribute to nuclear explosive device design and development.

Under the JCPOA, Iran must maintain a total enriched uranium stockpile of no more than 300 kilograms of up to 3.67 percent enriched uranium hexafluoride (UF6) or its equivalent in other chemical forms until 2031. Iran also had reduced its low-enriched uranium stockpile of about 8,500 kilograms to below 300 kilograms by shipping the material to Russia and downblending the remaining scrap to natural uranium.[126,127]

UN Security Council Resolution (UNSCR) 2231, which endorses the JCPOA but is separate from the nuclear agreement, sets out the specific limitations on Iran's nuclear program and places additional restrictions on Iran's ballistic missile program and its import and export of conventional arms.[128]

Recent Developments

In May 2018, the United States ceased participation in the JCPOA and began reimposing unilateral U.S. sanctions on Iran. Tehran announced it would continue upholding its commitments while negotiating with remaining JCPOA participants to try to sustain the deal.[129,130] However, Khamenei warned that Iran would exit the deal if Iran were unable to achieve sufficient economic benefits from the JCPOA absent the United States.[131] In June 2018, Tehran announced that it would begin taking steps to expand Iran's enrichment infrastructure within the bounds of the JCPOA.[132]

Iran announced, in May 2019, that it would begin to cease adhering to some of its JCPOA obligations and warned it would take further action if JCPOA members did not meet certain economic demands.[133] In early July 2019, the IAEA confirmed that Iran had exceeded the JCPOA limit on the size of its low-enriched uranium stockpile and had produced uranium with an enrichment level exceeding the JCPOA limit of 3.67 percent.[134,135] Tehran threatened to continue gradually ceasing other JCPOA commitments unless it receives sufficient sanctions relief.[136]



Image Source: Iranian Students News Agency (ISNA)

Iranian ballistic missiles on display during the annual Holy Defense Week parade in Tehran on 22 September 2014.

Military Doctrine and Strategy

Tehran employs a complex set of military and security capabilities, including a combination of conventional and unconventional forces. Iran's conventional military strategy is primarily based on deterrence and the ability to retaliate against an attacker. Its unconventional warfare operations and network of militant partners and proxies enable Tehran to advance its interests in the region and attain strategic depth from its adversaries. If deterrence fails, Iran would seek to demonstrate strength and resolve, impose a high cost on its adversary, and reestablish deterrence using the full range of these capabilities.

This strategy is unlikely to change considerably in the near term because of Iran's perception that its military remains technologically inferior to the United States—its primary adversary. However, since 2016, Khamenei and other senior leaders have suggested that Iran be more proactive in defending its territory and interests abroad.[137] Iran may seek to undertake other missions, such as small-scale expeditionary operations in the region and some participation in multilateral peacekeeping missions overseas.[138]

Iran's "way of war" emphasizes the need to avoid or deter conventional conflict while advancing its security objectives in the region, particularly through propaganda, psychological warfare, and proxy operations. Iran's deterrence is largely based on three core capabilities: ballistic missiles capable of long-range strikes, naval forces capable of threatening navigation in the Persian Gulf and Strait of Hormuz, and unconventional operations using partners and proxies abroad.[139]

Perceptions of Modern Conflict

The 8-year Iran-Iraq War underscored the importance of strategic depth, ballistic missiles, and self-sufficiency in military capabilities—areas Iran continues to prioritize today. Most of Iran's senior military leaders fought in the war, and their experiences have played a critical role in shaping Iranian military strategy and capabilities.[140]

During the past two decades, Iran has gradually shifted its military thinking and approach to warfare based on the 21st-century conflicts of the Middle East. It developed its military doctrine to face technologically advanced Western militaries, aiming to raise the human and financial costs to a potential adversary to deter an attack. Iran has sought to build its armed forces with niche capabilities emphasizing asymmetric tactics intended to exploit the perceived weaknesses of its enemies, such as an aversion to casualties and overreliance on technology.[141,142]

Iran probably views modern warfare as a spectrum with multiple levels of conflict, including "soft" and "hard" war.[143,144] Iranian decisionmakers realize the importance of engaging an adversary in competition short of armed conflict across all domains of state power: diplomacy with neighboring states and international bodies; information and psychological operations; conventional and unconventional military posture and presence; and economics through its ability to influence global energy markets. Tehran believes the United States is engaged in a hybrid war to subvert the regime and its objectives, blending conventional and unconventional tactics with all elements of state power. Iran views this situation as short of armed conflict.[145,146]

Since at least 2014, Iranian senior officials have stressed the need to improve military capabilities against a wider range of conventional and unconventional threats, such as terrorism and insurgencies, rather than focusing overwhelmingly on the United States and Israel as Iran's primary adversaries.[147,148] Senior Iranian officials, including Khamenei, have called publicly for the military to better address these threats and support Iran's rising regional involvement.[149,150] In 2016, Khamenei for the first time called on the military to boost its offensive capabilities in addition to defensive capabilities.[151] Military officials have since noted Iran's need to invest more in offensive capabilities and missions, such as combat air power and maintaining forward presence, areas it has traditionally neglected. Iranian leaders frequently describe the Middle East's instability as requiring a strategy of "active deterrence," involving intervention in regional conflicts to confront national security threats before they endanger the homeland.[152,153]

Military and Security Leadership

The regime often views political, cultural, and social dynamics as national security issues because these domains can affect the regime's ability to maintain clerical rule. Iran's power structures and decisionmaking bodies reflect this clerical oversight in all aspects of military and security policy.

Supreme Leader Khamenei, Iran's head of state since 1989, is the ultimate decisionmaker in the Iranian political system. Khamenei is responsible for delineating and supervising "the general policies of the Islamic Republic of Iran," according to the Iranian constitution, giving him the authority to direct all of Iran's domestic and foreign policies. As commander in chief, the supreme leader can declare war or peace. He has the power to appoint and dismiss military officials and the head of the judiciary, and appoints 6 of the 12 members of the Council of Guardians, which vets Iranian legislation and candidates for public office.[154,155]



President Ruhani speaks in front of portraits of Supreme Leader Khamenei and former Supreme Leader Khomeini on the 25th anniversary of Khomeini's death in 2014.

Image Source: AFP

President Ruhani is a pragmatic conservative cleric who serves as the popularly elected head of government. The president oversees the cabinet ministries, manages the budgetary process, and chairs the Supreme Council for National Security (SCNS). However, the Iranian constitution limits the authority of the president, who has no operational control of the military and can operate only within the boundaries set by the supreme leader.[156]

Major Military and Security Institutions

Supreme Council for National Security

The SCNS is the seniormost body for formulating foreign and security policy. The SCNS is formally chaired by the president, who also appoints the SCNS secretary, currently Vice Admiral Ali Shamkhani. Its members also include the speaker of the Majles; the head of the judiciary; the chief of the AFGS; the commanders of the IRGC and Artesh; and the ministers of defense, foreign affairs, the interior, and intelligence. As SCNS chair, the president holds some influence in Iranian foreign and defense policy. The SCNS reports to

the supreme leader, who makes all final security policy decisions and gives orders to the armed forces.[157]

Armed Forces General Staff & Khatemolanbia Central Headquarters

The AFGS is the seniormost military body in Iran, setting military policy and strategic guidance as directed by the supreme leader. The Khatemolanbia Central Headquarters (KCHQ) is responsible for coordinating military operations. The AFGS and KCHQ monitor and coordinate the activities of Iran's two militaries. In 2016, the KCHQ was separated from the AFGS as a standing independent command responsible for operational command and control (C2); previously, the KCHQ would only be stood up in wartime. At that time, the supreme leader appointed IRGC Major General Mohammad Bagheri as the AFGS chief—Iran's chief of defense (CHOD)—and IRGC Major General Gholam Ali Rashid as the KCHQ commander.[158]

Regular Forces (Artesh)

The Artesh primarily focuses on defending Iran's borders from external threats. It consists of ground, naval, air, and air defense components, which in total number about 420,000 personnel. Although generally not as fervent in ideology as the IRGC, the Artesh still adheres to *velayat-e faqih* and remains loyal to the supreme leader. The Artesh commander, currently Major General Adolrahim Musavi, reports to the AFGS chief.[159]

Islamic Revolutionary Guard Corps

Supreme Leader Khomeini established the IRGC, also known as the *Sepah* (corps) or *Pasdaran* (guard), shortly after the Islamic Revolution. It has a broader mission to defend the Iranian revolution from any foreign or domestic threat. The IRGC—designated as an FTO by the United States—consists of ground, naval, aerospace, and unconventional components, which in total number about 190,000 personnel. Including the estimated active personnel from Iran's paramilitary reserve force, the Basij, the IRGC numbers roughly 640,000 personnel. The IRGC commander, currently Major General Hossein Salami, reports to the AFGS chief. Informally, however, IRGC leaders have close access to the supreme leader's office and routinely advise the supreme leader and his advisers on foreign policy matters.[160]

Law Enforcement Force

Iran's national police force, the LEF, is responsible for maintaining internal stability and other police functions, such as counternarcotic operations and border security. The LEF formally falls under the Ministry of Interior, which reports to the president, but the supreme leader as commander in chief appoints the LEF commander, who is usually an IRGC general officer. In the event of escalating domestic unrest, the Basij and IRGC would reinforce the LEF.[161,162] In 2018, after the December 2017–January 2018 unrest, the LEF saw a substantial increase in its budget, even eclipsing the amount allocated to the Artesh.[163] The LEF has roughly 200,000–300,000 personnel nationwide, though estimates vary.[164,165]

Iranian Armed Forces Organizations Insignia

1805-17889


AFGS


ARTESH


IRGC


MODAFL


LEF

Ministry of Defense and Armed Forces Logistics

MODAFL is responsible for supporting and equipping the Iranian armed forces through military research, development, production, acquisition, and personnel support. Unlike many ministries of defense, MODAFL does not develop Iran's defense policy and is not in the chain of command.[166] The current defense minister is Artesh Brigadier General Amir Hatami.

Ministry of Intelligence and Security

The Ministry of Intelligence and Security (MOIS) is Iran's national-level civilian intelligence service. It is responsible for domestic security and intelligence, foreign intelligence, counterintelligence, monitoring Iranian expatriate communities, liaising with foreign intelligence services, and conducting sanctioned lethal operations. The current head of the MOIS is Mahmud Alavi-Tabar.[167]

Ministry of Foreign Affairs

Iran's Ministry of Foreign Affairs (MFA) is nominally responsible for executing Iranian foreign policy. However, in practice, other elements of the Iranian government, particularly the IRGC-QF, have more control of Iranian affairs in some countries.[168] The current MFA head is Mohammad Javad Zarif.

National Military Command and Control

Iran's constitution designates the supreme leader, not the president, as commander in chief of the armed forces, with the power to exercise military C2, declare war and peace, and approve military operations. Khamenei traditionally issues orders through the AFGS and KCHQ, which oversee and coordinate between the IRGC and Artesh, but sometimes bypasses these organizations to give orders directly to lower-level commanders.[169]

During a crisis, the supreme leader probably would consult with the SCNS to coordinate national policy. The president chairs the SCNS, and its members include key ministers and military leaders,



Supreme Leader Khamenei delivers a graduation speech at a military academy in 2006.

Image Source: AFP

Artesh Services Insignia

1805-17889


IRIGF


IRIN


IRIAF


KADHQ/IRIADF

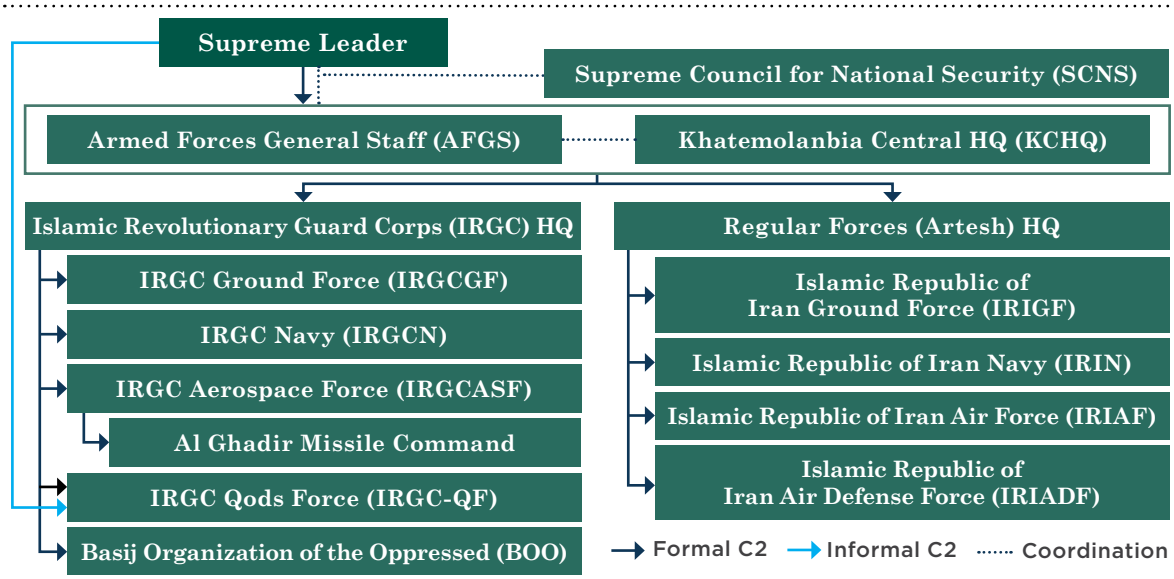
including the head of the AFGS and the highest-ranking officials in the IRGC and Artesh, per the Iranian constitution. The SCNS has an advisory role in policy decisions but no C2 authority.

The AFGS and KCHQ command the Artesh and the IRGC. Both militaries have their own ground, naval, air, and air defense forces; the IRGC also operates Iran's missile force and oversees its external operations element. The Artesh and IRGC usually conduct operations independent of each other. However, IRGC and Artesh commanders are increasingly focused on improving collaboration and joint operations as the militaries seek to undertake a wider range of missions domestically and abroad.[170]

Although the supreme leader and political elites depend on the IRGC more than the Artesh, the two organizations increasingly work together to confront internal and external threats. The IRGC is well connected within the Iranian government and the economy, and the supreme leader uses it to help maintain his authority.[171,172]

National Military Command and Control

1805-17889



Key Military Leaders



Image Source: AFP

Major General

Mohammad Hossein Bagheri

AFGS Chief (CHOD)

IRGC Major General Mohammad Hossein Bagheri has served as AFGS chief since June 2016. He is responsible for overseeing all Iranian military forces as Iran's highest-ranking military officer. Bagheri is tasked with overseeing and coordinating Iran's two parallel military forces—the Artesh and the IRGC—and reports directly to the supreme leader.[173]



Image Source: AFP

Major General

Gholam Ali Rashid

KCHQ Commander

IRGC Major General Gholam Ali Rashid has served as commander of the KCHQ, Iran's top operational headquarters, since June 2016. He has longstanding connections with other IRGC leaders dating back to the Iran-Iraq War.[174]



Image Source: AFP

Major General

Hossein Salami

IRGC Commander

Promoted and appointed IRGC commander in April 2019, IRGC Major General Hossein Salami is a key decisionmaker on foreign and domestic security issues because the IRGC retains a dominant role in the country's affairs. He oversees all IRGC activities, but has less control of the IRGC-QF, whose commander has a separate line of communication to Khamenei.[175]



Image Source: AFP

Major General
Abdolrahim Musavi

Artesh Commander

Appointed Artesh commander and promoted to major general in August 2017, IRIGF Major General Abdolrahim Musavi's career in the Artesh dates back to before the Islamic Revolution. Musavi's top priorities as Artesh commander include improving coordination of Artesh and IRGC operations and advancing Iran's defense self-sufficiency. As Artesh commander, he also holds a position on the SCNS and informs national security decisions.[176]



Image Source: AFP

Major General
Qasem Soleimani

IRGC-QF Commander

As commander of the IRGC-QF, IRGC Major General Qasem Soleimani is a key architect and chief executor of Iran's foreign policy in regional conflict zones, including Afghanistan, Iraq, the Levant, and Yemen. He is one of the most recognized and popular military leaders in Iran and wields significant influence in Iranian foreign policy decisionmaking. His close relationship with Khamenei allows him to often directly advise and receive orders outside the traditional chain of command.[177]



Image Source: AFP

Brigadier General
Amir Hatami

Minister of Defense and Armed Forces Logistics

IRIGF Brigadier General Amir Hatami—notably the first Artesh defense minister since MODAFL's inception in 1989—is responsible for overseeing research, development, production, and personnel support for the Iranian military. Although as defense minister Hatami plays a significant role in military modernization and defense diplomacy, he has no authority in the military chain of command.[178]



Image Source: AFP

An Iranian Qiam-1 SRBM unveiled in 2010.

Core Iranian Military Capabilities

Ballistic Missiles

Iran's ballistic missiles constitute a primary component of its strategic deterrent. Lacking a modern air force, Iran has embraced ballistic missiles as a long-range strike capability to dissuade its adversaries in the region—particularly the United States, Israel, and Saudi Arabia—from attacking Iran. Iran has the largest missile force in the Middle East, with a substantial inventory of close-range ballistic missiles (CRBMs), short-range ballistic missiles (SRBMs), and medium-range ballistic missiles (MRBMs) that can strike targets throughout the region as far as 2,000 kilometers from Iran's borders. Iran is also developing land-attack cruise missiles (LACMs), which present a unique threat profile from ballistic missiles because they can fly at low altitude and attack a target from multiple directions.[179,180]

Decades of international sanctions have hampered Iran's ability to modernize its military forces through foreign procurement, but Tehran has invested heavily in its domestic infrastructure, equipment, and expertise to develop

and produce increasingly capable ballistic and cruise missiles. Iran will continue to improve the accuracy and lethality of some of those systems and will pursue the development of new systems, despite continued international counterproliferation efforts and restrictions under UNSCR 2231. Iran is also extending the range of some of its SRBMs to be able to strike targets farther away, filling a capability gap between its MRBMs and older SRBMs. *[For more details on UNSCR 2231, see Appendix J.]*

Iran can launch salvos of missiles against large-area targets, such as military bases and population centers, throughout the region to inflict damage, complicate adversary military operations, and weaken enemy morale. Although it maintains many older, inaccurate missiles in its inventory, Iran is increasing the accuracy of many of its missile systems. The use of improved guidance technology and maneuverability during the terminal phase of flight enables these missiles to be used more effectively against smaller targets, including specific military facilities and ships at sea. These enhancements could reduce the miss-distance of some Iranian missiles to as little as tens of meters, potentially requiring fewer missiles to damage or destroy an intended target and broadening Iran's options for missile use.

Iran's more-accurate systems are primarily short range, such as the Fateh-110 SRBM and its derivatives. Iran's longer-range systems, such as the Shahab 3 MRBM, are generally less accurate. However, Iran is developing MRBMs with greater precision, such as the Emad-1, that improve Iran's ability to strike distant targets more effectively. Iran could also complicate regional missile defenses by launching large missile salvos.

Iran lacks intermediate-range ballistic missiles (IRBMs) and intercontinental ballistic missiles (ICBMs), but Tehran's desire to have a strategic counter to the United States could drive it to develop and eventually field an ICBM. Iran continues to develop space launch vehicles (SLVs) with increasing lift capacity—including boosters that could be capable of ICBM ranges and potentially reach the continental United States, if configured for that purpose. Progress in Iran's space program could shorten a pathway to an ICBM because SLVs use inherently similar technologies.[181,182,183,184,185]

[For more details on Iran's missile force, see Appendix A.]

Other Long-Range Strike Options

To supplement its long-range strike capabilities, Iran could also attempt to use its regional proxies and limited airstrike capability to attack an adversary's critical infrastructure. Iran maintains an aging inventory of combat aircraft—such as decades-old U.S. F-4 Phantoms—which it could attempt to use to attack its regional adversaries. However, these older platforms would be more vulnerable to air defenses than modern combat aircraft.[186] Iran could also use its armed UAVs for limited long-range airstrikes, potentially in combination with missiles, as it demonstrated during strikes against ISIS in Syria in 2018.[187]

Antiaccess/Area Denial

Iran's antiaccess/area denial (A2/AD) strategy seeks to prevent an adversary from entering or operating in areas that it considers essential to its security and sovereignty. Iranian A2/AD relies primarily on Iran's naval forces and geostrategic position along the Persian Gulf and Strait of Hormuz—a critical chokepoint for the world's oil supply. Iran's layered maritime defenses consist of numerous platforms and weapons intended, when used in a combined fashion, to overwhelm an adversary's naval forces. Iran emphasizes asymmetric tactics, such as small boat attacks, to saturate a ship's defenses. The full range of Iran's A2/AD capabilities include ship- and shore-launched antiship cruise missiles (ASCMs), fast attack craft (FAC) and fast inshore attack craft (FIAC), naval mines, submarines, UAVs, antiship ballistic missiles (ASBMs), and air defense systems.[188,189]

Maritime Threat Capabilities

Capitalizing on the strategic nature of its littoral, Iran's maritime A2/AD strategy employs a combination of surface combatants, undersea warfare, and antiship missiles to deter naval aggression and hold maritime traffic at risk. Particularly with its large fleet of small surface vessels—high-speed FAC and FIAC equipped with machine guns, unguided rockets, torpedoes, ASCMs, and mines—Iran has developed a maritime guerrilla-warfare strategy intended to exploit the perceived weaknesses of traditional naval forces that rely on large vessels. Iran can also use its undersea warfare capabilities, which include Yono class midget submarines and Kilo class attack submarines, to attack surface ships in the Persian Gulf, Strait of Hormuz, and Gulf of Oman. Iran operates coastal defense cruise missiles (CDCMs) along its southern coast, which it can launch against military or civilian ships as far as 300 kilometers away. Iran also maintains an estimated inventory of more than 5,000 naval mines, including contact and influence mines, which it can rapidly deploy in the Persian Gulf and Strait of Hormuz using high-speed small boats equipped as minelayers.[190,191,192] *[For more details on Iran's naval forces, see Appendix B.]*



IRGCN FAC/FIAC attack a mock U.S. aircraft carrier during an exercise in 2015.

Image Source: AFP

Long-Range Strike

During a conflict, Iran probably would attempt to attack regional military bases and possibly energy infrastructure and other critical economic targets using its missile arsenal. Even with many of its missile systems having poor accuracy, Iran could use large salvos of missiles to complicate an adversary's military operations

in theater, particularly if some of Iran's newer, more-accurate systems are incorporated. Iran has also developed short-range ASBMs based on its Fateh-110 system. Iran could use these ASBMs, in concert with its other countermaritime capabilities, to attack adversary naval or commercial vessels operating in the Persian Gulf or Gulf of Oman.[193]

Air Defenses

Iran operates a diverse array of SAM and radar systems intended to defend critical sites from attack by a technologically superior air force. Operational since 2017, Iran's Russian-provided SA-20c long-range SAM system is the most capable component of its integrated air defense system (IADS).[194] Iran is also fielding more-capable, domestically developed SAM and radar systems to help fill gaps in its air defenses.[195]

Unconventional Warfare

Iran's unconventional warfare capability serves as a means of power projection and as part of its A2/AD strategy. Iran could use its strong ties to militant and terrorist groups in the region—such as Hizballah, Iraqi Shia militias, and the Huthis—to target critical adversary military and civilian facilities. Proxy attacks against adversary military bases in the region could complicate operations in theater.[196]

Unconventional Operations

Iran has consistently demonstrated a preference for using partners, proxies, and covert campaigns to intervene in regional affairs because of limitations in its conventional military capabilities and a desire to maintain plausible deniability, thereby attempting to minimize the risk of escalation with its adversaries.[197]

Iran's reliance on unconventional operations—which is enabled by its relationships with a wide range of primarily Middle Eastern militias, militant groups, and terrorist organizations—is central to its foreign policy and defense strategy. The IRGC-QF is Tehran's primary tool for conducting unconventional operations and providing support to partners and proxies. The commander of the IRGC-QF, Major General Soleimani, has a close relationship with Khamenei, often communicating with and taking orders from him directly.

Through the IRGC-QF, Iran provides its partners, proxies, and affiliates with varying levels of financial assistance, training, and materiel support. Iran uses these groups to further its national security objectives while obfuscating Iranian involvement in foreign conflicts. Tehran also relies on them as a means to carry out retaliatory attacks on its adversaries. Most of these groups share similar religious and ideological values with Iran, particularly devotion to Shia Islam and, in some cases, adherence to *velayat-e faqih*. However, Iran has also established relationships with more diverse groups based on shared enemies, common threats, and mutually beneficial goals.

The strength of Iran's relationship with these groups varies widely. Iran's strongest and most successful regional partnership is with Hizballah, dating back to 1982. The relationship today involves Iranian sponsorship, cooperation, and shared sectarian and political interests, espe-

cially against Israel and the United States. However, Hizballah retains its decisionmaking in internal Lebanese affairs.[198,199,200]

In recent years, the conflicts in Syria, Iraq, and Yemen have placed new demands on the IRGC-QF to manage Iranian involvement in multiple combat zones, including some support from Iranian conventional forces. In Syria, Iran maintains a strong relationship with the Asad regime, which it views as a critical ally and conduit to Hizballah.[201] In Iraq, the IRGC-QF has strong influence with Iranian-aligned Shia groups operating within the Popular Mobilization Forces (PMF), many of whom have cooperated with Baghdad to defeat ISIS.[202] In Yemen, Iran has supported the Huthi rebels with financial assistance, weapons, military training, and operational advice.[203]

Iran also uses the IRGC-QF to provide varying levels of support to Shia groups in Bahrain, some Palestinian militant groups, and the Taliban in Afghanistan.[204] As active combat operations have drawn down in Syria and Iraq, Tehran could choose to increase support to historical unconventional lines of effort in the region or pursue new opportunities.

[For more details on Iran's unconventional forces, see Appendix C.]

Expeditionary Operations

Iran has limited expeditionary warfare and force projection capabilities. It has shown itself capable of sending small groups of conventional forces—including ground forces, military airlift, and UAV operators—into permissive allied countries to support larger operations. Since the outbreak of the Syrian civil war in 2011, Iran has become increasingly involved in regional conflicts, with varying levels of military intervention in Iraq, Syria, and Yemen. The IRGC-QF remains the lead for these operations, but Iran has adapted its approach to external operations by incorporating conventional Iranian forces in addition to large numbers of Shia foreign fighters. Iran's military has also revised professional military education to emphasize lessons learned from operations in Syria and Iraq, where it also has gained its first experience conducting combined operations with allied military forces.

In Syria, Iran has worked to defeat ISIS and defend the Asad regime against insurgent groups, with Iranian and Iranian-affiliated forces serving as critical force multipliers for the regime. In the spring of 2016, Tehran deployed a small number of ground forces from the Artesh to Syria—the first such deployment outside Iran since the Iran-Iraq War.[205]



Soldiers carry the caskets of IRGC personnel killed in Syria in 2016.

Image Source: AFP

As early as 2014, Iran deployed military advisers and some conventional ground forces to Iraq to combat ISIS and prevent the state's fragmentation, although Iran maintains a larger conventional military presence in Syria. The IRGC-QF has strong ties to many Iraqi Shia groups that have participated in operations to retake Iraqi territory from ISIS.[206,207]

In Yemen, Iran provides military support to the Huthis against the Saudi-led coalition, enabling Tehran to indirectly pressure Riyadh without entering into a direct military conflict. Huthi missile launches against targets in Saudi Arabia and attacks on Saudi-led coalition ships demonstrate Iran's provision of increasingly lethal capabilities to the Huthis. Tehran's provision of explosive boat technology and Iranian-made missiles, including the extended-range Qiam SRBM, provides the Huthis with systems exceeding the capabilities of the pre-conflict Yemeni inventory.[208,209]

Iran does not participate meaningfully in international peacekeeping operations, contributing only a few personnel to the African Union-United Nations Hybrid Operation in Darfur (UNAMID). However, Tehran has expressed interest in expanding its military support to international peacekeeping missions, potentially as a way to increase legitimacy, participate in multilateral initiatives, and develop expeditionary-like capabilities through operations other than war.[210,211]

Iran can also conduct limited out-of-area naval operations as far as China, South Africa, and the Mediterranean Sea. The Islamic Republic of



Then-IRIN Commander Rear Admiral Habibollah Sayyari discussing Iranian naval operations during a press conference in 2010.

Image Source: AFP

Iran Navy (IRIN) maintains regular rotations of deployed naval groups (DNGs) for counter-piracy, presence, and naval diplomacy missions in the Arabian Sea, Gulf of Aden, and sometimes the Indian Ocean. Often plagued with maintenance issues, the DNGs are largely symbolic, showcasing Iran's projection of force beyond its territorial waters.[212,213]

Cyberspace

Iran uses cyberspace operations as a tool of statecraft and internal security, and it continues to improve its capabilities. Tehran views these operations as a safe, low-cost method to collect information and retaliate against perceived threats. Tehran often masks its cyberoperations using proxies to maintain plausible deniability. However, there are often clear indications that link these operations to Iran's security apparatus. Domestically,

the Iranian government pursues domination of the cyberspace environment to influence the population's ideological and cultural exposure. Abroad, Tehran intimidates, harasses, and influences adversaries by conducting cyberoperations and empowers its proxy networks to do the same.

Compared to more technologically advanced states, such as the United States, China, and Russia, Tehran's offensive cyberspace capabilities remain underdeveloped. Although accounts of Iranian hacking first emerged in the early 2000s, state-sponsored cyberspace activities did not appear publicly until 2007. Prompted by the 2010 Stuxnet cyberattack on Iran's nuclear centrifuges, Iran recognized the need to develop its cyberspace capability as a strategic priority. Tehran receives technical assistance for cyberspace defense from Russia and China, and Ruhani has repeatedly made commitments to increase Iran's cyberspace budget. Iran has quickly evolved from using web defacements and basic censorship to conducting more-sophisticated internal information controls, destructive attacks, and espionage campaigns.

Iranian cyberspace actors use phishing and defacing campaigns against commercial enterprises, as well as cyberespionage against military and government data. Iranian cyberactors frequently target aerospace companies, defense contractors, energy and natural resource companies, and telecommunications firms for cyberespionage operations. Since at least 2014, Iranian cyberactors have stolen credentials and spread malware on business networks. These cyberespionage efforts can support Iran's military research and development efforts and commodities industries.[214,215,216]

Iran has shown it is capable of disruptive and destructive offensive cyberattacks, including against U.S. targets. After a 2012 malware attack targeting an Iranian oil facility, Iran responded with a cyberattack on Saudi Aramco and Qatari RasGas, using malware to cause irreparable damage to thousands of computers. During 2012–2013, Iranian hackers launched a distributed denial of service (DDoS) campaign against major U.S. banks and the U.S. Stock Exchange, and in 2014 conducted a data-deletion attack on a U.S. casino. During the 2014 Israel-Gaza conflict, Iranian cyberactors launched a DDoS attack against Israel Defense Forces infrastructure. From late 2016 to early 2017, Iran conducted another larger and more damaging malware attack against Saudi targets, including the civil aviation authority, labor ministry, and central bank.[217]

Iranian cyberactors also conduct ongoing information operations aimed at promoting pro-Iranian political interests via the use of a network of fake social media accounts. These accounts promote anti-Saudi and anti-Western stances and support policies that Tehran views as favorable.[218]

Intelligence

Iran's intelligence services are capable of sophisticated operations worldwide to counter potential threats to the regime, its revolutionary ideology, and its interests. Iran's intelligence community is composed of 16 organizations charged with foreign intelligence, counterintelligence, and internal monitoring and security missions.[219] These organizations include the MOIS and headquar-

ters elements and subcomponents within the IRGC and Artesh. Overlapping missions and parallel chains of command—particularly between the MOIS and elements of the IRGC—fuel competition between the organizations for resources, missions, and prestige. The Intelligence Coordination Council, chaired by the MOIS, is charged with coordinating and deconflicting the operations of Iran's intelligence organizations.

The MOIS is Iran's national-level civilian intelligence service. It is responsible for domestic security and intelligence, foreign intelligence, monitoring Iranian expatriate communities, liaising with foreign intelligence services, counterintelligence, and sanctioned lethal operations. The MOIS primarily collects information regarding the intentions and capabilities of foreign governments and dissidents Iran regards as hostile.[220] The IRGC Intelligence Organization (IRGC-IO) is Iran's foremost military intelligence service, capable of all-source collection, analysis, and investigations. The IRGC also operates a Counterintelligence Organization that is charged with protecting IRGC personnel, operations, and facilities from espionage, information leaks, and other counter-revolutionary threats. The Artesh has a joint military intelligence capability tasked with tactical intelligence gathering, counterintelligence operations, and internal security.[221]



IRGC-IO Chief Hossein Taeb.

Image Source: Wikimedia Commons

[For more details on Iran's intelligence services, see Appendix H.]

Space/Counterspace

Iran recognizes the strategic value of space and counterspace capabilities. Tehran claims to have developed sophisticated capabilities, including SLVs and communications and remote sensing satellites. Iran's simple SLVs are only able to launch microsatellites into low Earth orbit and have proven unreliable with few successful satellite launches. The Iran Space Agency and Iran Space Research Center—which are subordinate to the Ministry of Information and Communications Technology—along with MODAFL, oversee the country's SLV and satellite development programs. Iran initially developed its SLVs as an extension of its ballistic missile program, but it has genuine civilian and military space launch goals.

Iran has conducted several successful launches of the two-stage Safir SLV since its first attempt in 2008. It has also revealed the larger two-stage Simorgh SLV, which it launched in July 2017 and January 2019 without successfully placing a satellite into orbit. The Simorgh could serve as a test bed for developing ICBM technologies. Because of the inherent overlap in technology between ICBMs and SLVs, Iran's development

of larger, more-capable SLV boosters remains a concern for a future ICBM capability. In 2005, Iran became a founding member of the Asia-Pacific Space Cooperation Organization (APSCO), which is led by China, in order to access space technology from other countries.[222,223]



An Iranian Safir SLV is prepared for launch in 2009.

Image Source: AFP

Iran's counterspace capabilities have centered around jamming satellite communications and GPS, and Iran is reportedly making advancements in these areas.[224,225] Iran is also seeking to improve its space object surveillance and identification capabilities through domestic development and by joining international space situational awareness projects through APSCO.[226]

Chemical and Biological Warfare

Iranian leaders have long been concerned about the threat of chemical and biological warfare because of the considerable loss of life from chemical weapons during the Iran-Iraq War. Iran is a States party to both the Chemical Weapons Convention (CWC) and the Biological and Toxin Weapons Convention (BWC), which ban the development, production, and stockpiling of certain chemical and biological agents. Iran publicly denounces the use of weapons of mass destruction (WMD), and Khamenei has reportedly issued a *fatwa* (Islamic legal ruling) against chemical weapons.[227]

In November 2018, the United States found Iran noncompliant with its CWC obligations. Iran failed to declare its transfer of chemical weapons to Libya in the 1980s or its holdings of riot control agents, such as the tearing agent CR, and has not submitted a complete chemical weapons production facility declaration. The United States is also concerned that Iran is pursuing central nervous system-acting chemicals for offensive purposes. Although these chemicals have legitimate uses as pharmaceuticals, they can be lethal at certain doses.[228,229]

Denial and Deception

Denial and deception (D&D) is a core component of Iranian military doctrine, and Iran uses D&D techniques extensively to reduce the vulnerability and increase the survivability of its military forces. To apply these techniques across the military, Tehran has established what it calls a "passive defense" doctrine. The effort was based on lessons learned from past military conflicts, including U.S. operations in the Middle East and the 2006 Israel-Hizballah conflict. Iran's nationwide passive defense program comprises a wide range of D&D tactics to hinder foreign intelligence collection and ensure the survivability of critical infrastructure and core military capabilities. Key Iranian passive defense measures include camouflage and concealment, force dispersals, underground facilities, and highly mobile units. For example, Iran configures some military vehicles to resemble civilian trucks. Iran's passive defense doctrine also includes aspects of cyberdefense, mainly to protect networks from cyberattack and intrusion from outside influences.

The National Passive Defense Organization (NPDO) sends guidance and regulations to passive defense offices embedded across Iranian industries and civilian organizations. The NPDO has pressed the importance of the passive defense doctrine beyond the military in public forums, including Friday prayers. In 2012, Iran established Passive Defense Week, a nationwide effort to promote awareness for key passive defense measures.[230,231,232,233,234,235,236,237]

Underground Facilities

Iran has the largest underground facility (UGF) program in the Middle East. Based on the central pillars of Iran's passive defense doctrine, Tehran has invested heavily in constructing UGFs to conceal and protect critical military and civilian infrastructure throughout the country. Iran designed and built these facilities to support various aspects of its defense industries, key nuclear infrastructure, and military forces, including naval sites, missile bases, and equipment storage.[238]

In late 2009, Ali Akbar Salehi, head of the Atomic Energy Organization of Iran (AEOI), stated Iran would build nuclear facilities in mountains as a response to international pressure for Tehran to abandon its nuclear ambitions.[239] Iran houses portions of its nuclear program within deep tunnels and underground bunkers at locations such as Natanz and Fordow (Qom).[240,241] However, both sites are subject to restrictions outlined in the JCPOA and closely monitored by the IAEA.

UGFs support most facets of Tehran's ballistic missile capabilities, including the operational force and the missile development and production program. Missile-related UGFs house weapons and equipment storage, underground basing of mobile missiles, and hardened launch sites.[242] In recent years, Iran has used state media to broadcast the launch of ballistic missiles from underground launch chambers and showcase underground missile garrisons.[243] Regional media also indicates Iran is aiding proxies in the Middle East by helping them construct underground missile production facilities.[244]

Outlook: Building a More Capable Conventional Force

Iran will continue to use a combination of conventional and unconventional capabilities to achieve its objectives at home and abroad, as Tehran's core national security objectives are unlikely to change for the foreseeable future. Seeking to strengthen its regional position, Tehran is attempting to bolster its ties in the international community and build the capacity of its partners in the Middle East, while advancing its military capabilities at home for defense and deterrence. Recognizing its inability to defeat an advanced Western military, such as the United States, Iran in the near term probably will continue to emphasize its three core capabilities: ballistic missiles capable of striking targets throughout the region, littoral naval forces capable of threatening navigation in the Persian Gulf and Strait of Hormuz, and support for partners and proxies capable of unconventional operations abroad.

Although the IRGC-QF and its network of proxies will remain central to Iran's military power, Tehran will improve its conventional forces and seek new capabilities. Iran's latest 5-year development plan continues priority for missiles, naval forces, and air defenses, but it also adds new emphasis on combat air power and EW capabilities. Iran probably will continue to focus on domestic development of increasingly capable missiles, naval platforms and weapons, and air defenses, while it attempts to upgrade some of its deteriorating air and ground capabilities primarily through foreign purchases. Under UNSCR 2231, Iran is prohibited from procuring most types of conventional weapon systems from abroad. However, these restrictions are set to expire by October 2020, providing Tehran with the opportunity to acquire some advanced capabilities that have been beyond its reach for decades.

- **Missile Force.** Iran will deploy an increasing number of more accurate and lethal theater ballistic missiles, improve its existing missile inventory, and field new LACMs. It will also pursue technical capabilities that could enable it to produce an ICBM.
- **Naval Forces.** Iran's naval forces will field increasingly capable platforms and weapons, including improved naval mines, faster and more lethal surface platforms, more-advanced ASCMs, larger and more-sophisticated submarines, and new ASBMs.
- **Air and Air Defense Forces.** Iran will modernize its IADS with new air surveillance radars, SAMs, and command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems. Once the UN arms embargo ends, Tehran can purchase advanced fourth-generation fighter aircraft. Iran will also develop and field more-capable UAVs, including armed platforms.

- **Ground Forces.** The ground forces will continue structural changes, including the creation of new rapid-response brigades, which could enable them to become more agile and effective in countering threats. Iran also will be able to buy modern main battle tanks after the UN embargo ends.

Despite these goals, ongoing financial constraints and sanctions will challenge Iran's military modernization efforts. Tehran will be unable to meet all of its acquisition priorities and requirements in this environment. The complex security situation of the Middle East—with the continued presence of U.S. forces, the superior force projection capabilities of Israel, and the growing military means of Saudi Arabia and the Gulf states—will further complicate Iran's efforts to build its conventional force.

As Iran's perception of the threats it faces evolves during the coming years, the military will be forced to contend with new roles and missions. Iran's current modernization plans emphasize a broader range of conventional capabilities than in the past. Iranian leaders have repeatedly noted that Iran must improve its capabilities against a wider range of conventional and unconventional threats, such as terrorism and insurgencies, and be more proactive in defending Iranian territory and interests abroad. Since the supreme leader's mandate in 2016 for Iran to improve both its defensive and offensive capabilities, military officials have stressed the need to invest in new capabilities and missions, such as combat air power and maintaining forward presence, areas it has traditionally neglected. Beyond Iran's unprecedented deployment of conventional forces to Iraq and Syria, officials have taken steps—including changes in force structure, training, and tactics—toward revising its military doctrine.

As its capabilities improve and its approach to the region evolves during the next decade, Iran's military could consider undertaking broader missions, such as multilateral peacekeeping missions, expeditionary operations elsewhere in the region, or permanent basing in allied countries. Nevertheless, Iran's conventional forces today remain primarily oriented for defensive missions and continue

Evolving Military Training

Some recent Iranian exercises have begun to demonstrate changes in Iranian military doctrine. In December 2018, Iran conducted its first major amphibious assault exercise in many years, NOBLE PROPHET 12. The IRGCGF commander described the exercise as Iran's first demonstration of offensive aspects of its defensive doctrine, noting that an ability to conduct offensive operations is a key element of Iran's deterrence. In January 2019, the IRIGF also employed offensive tactics during its EQTEDAR 97 exercise. Officials noted the event displayed Iran's resolve to proactively attack its enemies instead of waiting to respond.[245,246,247]

to rely on asymmetric tactics. More substantial and sustained institutional reforms and investments in new equipment will be required for Iran to develop a more balanced military capable of both defensive and expeditionary operations.

Iranian Military Modernization Goals[248,249]

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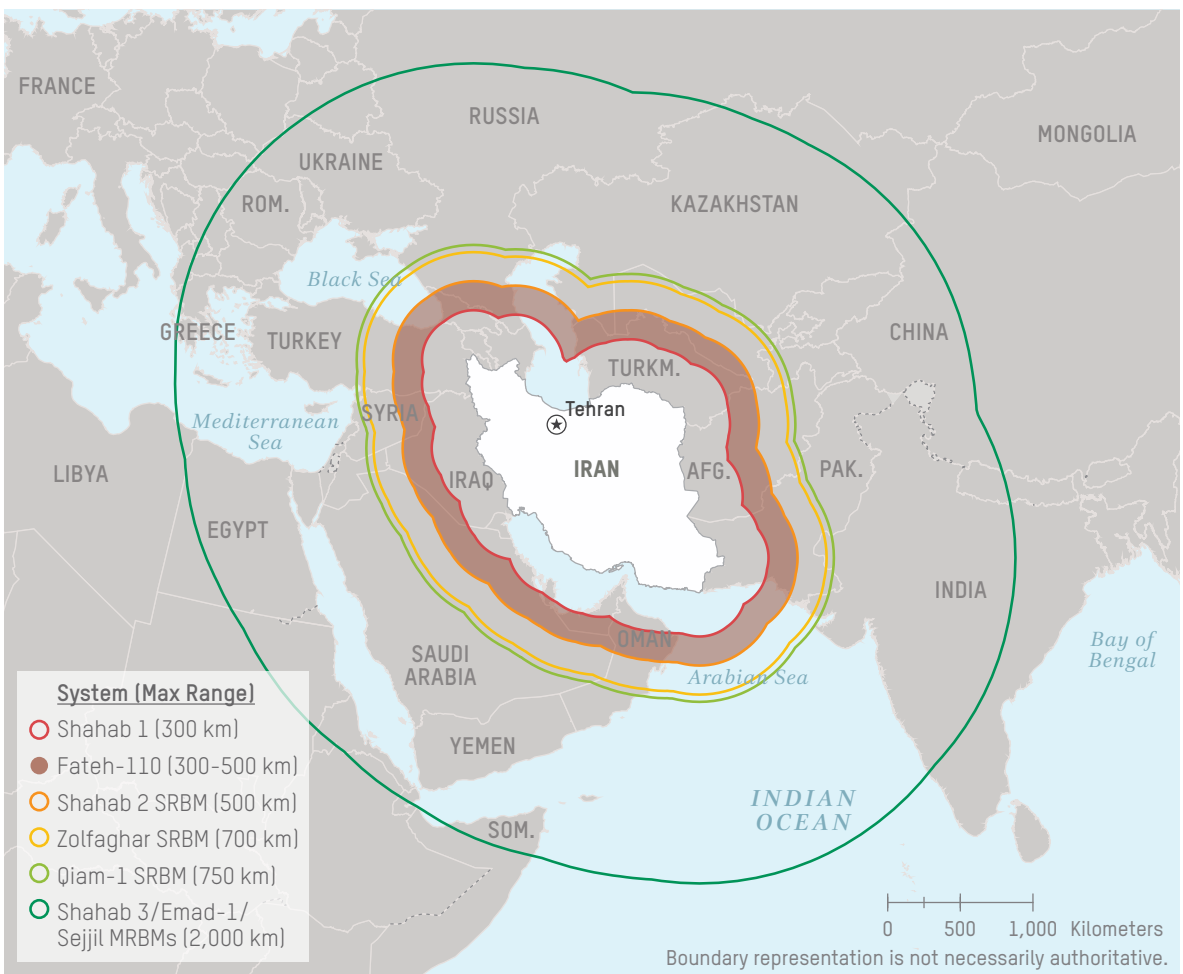
Capability	Stated Goals
Missile	Increase the accuracy, lethality, and production of ballistic and cruise missiles
Air Defense	Develop longer-range SAMs and improve short- and medium-range systems
Air	Develop advanced offensive and defensive air power
Navy	Attain regional and deterrent sea power
Ground	Strengthen ground combat and rapid-reaction capability
EW/C4ISR	Improve EW and C4ISR posture, including space-based capabilities
Cyberspace	Increase cyberspace presence and hold adversary infratructure at risk

Appendix A: Missile Force

Iran has the largest and most diverse ballistic missile arsenal in the Middle East, with a substantial inventory of close-range ballistic missiles (CRBMs), short-range ballistic missiles (SRBMs), and medium-range ballistic missiles (MRBMs) that can strike targets throughout the region up to 2,000 kilometers from Iran's borders, as far as Israel and southeastern

Iranian Ballistic Missile Ranges

1805-17885



Graphic Source: DIA, D3 Design

Europe. Iran's missile force—the Al-Ghadir Missile Command (AGMC), which falls under the control of the IRGC Aerospace Force (IRGCASF)—serves as a critical strategic deterrent and a key tool of Iranian power projection.

The AGMC periodically conducts highly publicized national-level exercises demonstrating the capabilities and readiness of the force, often as part of the IRGC's NOBLE PROPHET series of exercises. In 2017, Iran for the first time used the name EQTEDAR-E VELAYAT for its major AGMC exercise. These show-of-force events typically include publicized missile launches and statements highlighting Iran's missile capabilities and deterrent posture. Prior exercises have showcased launches against a mock U.S. airfield and naval targets.[250,251,252]

Iran has also used its missiles in combat on several occasions in recent years. In June 2017 and October 2018, Iran launched SRBMs from western Iran in high-profile strikes against ISIS targets in Syria. Iran conducted both operations in direct response to terrorist attacks in Iran, although some officials noted the attacks were also intended as a message to any of Iran's potential adversaries.[253,254,255] In September 2018, Iran launched SRBMs against Kurdish militant targets in Iraq, damaging the Kurdish Democratic Party of Iran (KDPI) headquarters.[256]

Iran's continued production of missiles and refinement of ballistic missile technology pose a growing threat to U.S. forces and allies in the Middle East. Tehran is also a major proliferator of ballistic missile technology to regional state actors and proxy groups. Although Iranian leaders emphasize self-reliance, Iran continues to depend on foreign suppliers for critical components and technology.

Iran has an extensive missile development program, and the size and sophistication of its missile force continues to grow despite decades of counterproliferation efforts aimed at curbing its advancement. Iran continues to attempt to increase the lethality, reliability, and accuracy of its missile force. In recent years, Iran has unveiled SRBMs with increasingly greater range and precision as well as MRBMs with claimed accuracy and warhead improvements. Iran is fielding an increasing number of theater ballistic missiles, improving its existing inventory, and developing technical capabilities that could enable it to produce an intercontinental ballistic missile (ICBM).[257,258,259,260,261]

Close- and Short-Range Ballistic Missiles

Iran's liquid-propellant SRBMs—the Shahab 1, Shahab 2, and Qiam-1—are based on Scud technology. The Qiam-1 has a range of at least 750 kilometers, and variants of the system have been used as part of Iranian strikes on ISIS in Syria. Tehran has also supplied extended-range Qiam-1 variants to the Huthis in Yemen. These missiles, launched mostly at Riyadh, Saudi Arabia, have flown to a range of more than 900 kilometers.[262,263,264]

Iran's solid-propellant CRBMs and SRBMs primarily consist of the many variants of the Fateh-110 family of missiles. Most of these systems have ranges up to about 300 kilometers, but Iran



A Shahab 1 SRBM is launched during an exercise in 2012.

Image Source: AFP



A Shahab 3 MRBM is launched during an exercise in 2016.

Image Source: AFP

has unveiled a variant called the Fateh-313 with a 500-kilometer range. Iran has also advertised several variants of these missiles configured with different terminal seeker technologies, including electro-optical and antiradiation homing, which makes them capable of targeting ships. These systems—which include the Khalij Fars, Hormuz 1, and Hormuz 2—reportedly have ranges of about 300 kilometers.[265] In September 2016, Iran unveiled the new Zolfaghar SRBM, a solid-propellant system with a 700-kilometer range. Iran used these missiles in its 2017 and 2018 strikes against ISIS in Syria.[266]

Medium-Range Ballistic Missiles

The liquid-propellant Shahab 3 is the mainstay of Iran's MRBM force. Iran has modified the Shahab 3, which is based on the North Korean No Dong MRBM, to extend its range and effectiveness, with the longest range variant being able to reach targets at a distance of about 2,000 kilometers. In 2015, Iran publicized the first launch of a Shahab 3 variant—called the Emad-1—equipped with a maneuverable reentry vehicle (MARV), which could allow the system to strike targets up to potentially 2,000 kilometers away with near-precision accuracy. Iran has also conducted multiple launches of the solid-propellant Sejjil MRBM, which also has a range of 2,000 kilometers. Iranian officials have announced plans for an Emad-2 with greater

precision as well as a new Sejjil variant, which can also be guided all the way to the target.[267] In September 2016, Iran claimed production of the new Khorramshar MRBM would begin in 2017. The Khorramshahr, which Iran states has a 2,000-kilometer range, appears to be derived from North Korean Musudan technology.[268,269]

Land-Attack Cruise Missiles

In 2012, Iran announced the development of its first land-attack cruise missile (LACM), called Meshkat. In 2015, Iran displayed what it called the Soumar LACM, a ground-launched system that appears to be based on the Russian air-launched AS-15. Iran claims the Soumar has a 2,000-kilometer range. LACMs can provide Iran with a precision-strike capability up to MRBM ranges that could further complicate missile defenses.[270]

Space Launch Vehicles

Since 2008, Iran has launched multi-stage space launch vehicles (SLVs) that could also aid Iran's development of longer-range ballistic missiles



The unveiling of the Simorgh SLV in 2010.

Image Source: AFP

because SLVs use inherently similar technologies. Iran has conducted multiple launches of the two-stage, liquid-propellant Safir SLV, a mix of successes and failures. It has also launched the larger two-stage, liquid-propellant Simorgh SLV, which is designed to carry satellites higher into orbit and could also serve as a test bed for developing ICBM technologies. The Simorgh could be capable of ICBM ranges if configured as a ballistic missile.[271,272]

Selected Iranian Ballistic Missiles[273]

1805-17887



System	Fateh-110 SRBM (and variants)	Shahab 1 SRBM	Shahab 2 SRBM	Zolfaghar SRBM	Qiam-1 SRBM	Shahab 3 MRBM	Emad-1 MRBM	Sejjil (Ashura) MRBM
Maximum Range (km)	300–500	300	500	700	At least 750	Up to 2,000	Up to 2,000	2,000
Propellant Type	Solid	Liquid	Liquid	Solid	Liquid	Liquid	Liquid	Solid
Deployment Mode	Road-mobile	Road-mobile	Road-mobile	Road-mobile	Road-mobile, Silo	Road-mobile, Silo	Road-mobile	Road-mobile

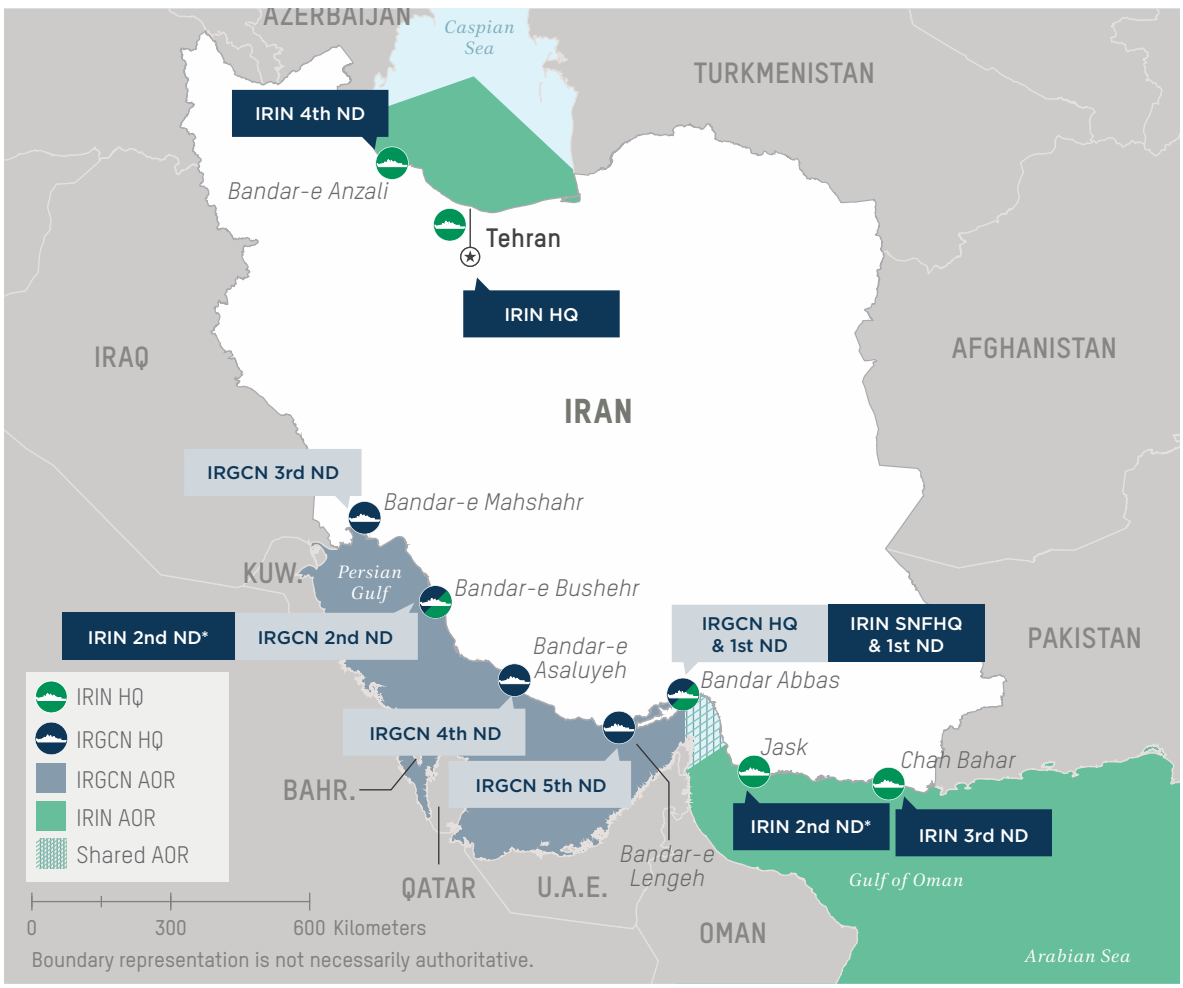
Note: This chart does not include all systems in development. All ranges are approximate.

Appendix B: Naval Forces

Iran operates two independent naval forces—the Islamic Republic of Iran Navy (IRIN), the Artesh's naval branch, and the IRGC Navy (IRGCN). Iran established the IRGCN in 1985; the IRIN existed as part of the Artesh before the 1979 revolution. The commander of the IRIN is Rear Admiral Hossein Khanzadi, and the commander of the IRGCN is Rear Admiral Alireza Tangsiri.[274]

Iranian Naval Headquarters and Areas of Responsibility

1805-17885



Graphic Source: DIA, D3 Design

In 2007, the two naval forces reorganized, and Iran assigned specific areas of operation for each. Tehran assigned the IRGCN sole responsibility for the Persian Gulf and assigned the IRIN the Gulf of Oman and Caspian Sea. Both services continued to share responsibility for the Strait of Hormuz. The geographic split helped streamline command and control (C2) while reducing confusion, miscommunication, and duplication of efforts. With the added responsibility, the IRGCN established two new naval districts (NDs) in the central and southern Persian Gulf. The reorganization also provided the IRIN with a greater mandate to operate farther from the Iranian coast.[275]

U.S. and Iranian naval forces interact on a routine basis in the Persian Gulf. Historically, more than 90 percent of such interactions have been deemed safe and professional, and the vast majority continue to be.[276,277] However, Iran has increased maritime surveillance of U.S. forces in the Persian Gulf using unmanned aerial vehicles (UAVs), and the potential remains for additional unsafe and unprofessional interactions.[278]

Amid increased tension with the United States in mid-2019, Iran has used its naval forces to demonstrate resolve and threaten freedom of navigation. In May and June 2019, Iran conducted limpet mine attacks against several merchant vessels in the Gulf of Oman. In July 2019, the IRGCN also seized a UK-flagged oil tanker in the Strait of Hormuz after the United Kingdom seized an Iranian-flagged oil tanker near Gibraltar. [279,280,281,282]

Islamic Republic of Iran Navy

The IRIN comprises approximately 18,000 personnel and is considered Iran's "blue water navy" with its larger and more traditional surface ships compared with the IRGCN. Iran is the only Persian Gulf nation with a submarine force, which the IRIN operates. The service's primary mission is to defend Iranian territorial waters and protect the country's economic interests in the Caspian Sea, Gulf of Oman, and beyond. It consists of primarily older, small surface combatants along with mostly small submarines and some logistic support vessels. As part of Iran's layered maritime defenses, the IRIN provides antisurface warfare capabilities focused on the Gulf of Oman with coastal defense cruise missiles (CDCMs), naval mines, surface combatants, and submarines. The IRIN is Iran's first line of defense in the Gulf of Oman and the Arabian Sea. The IRIN also aims to secure Iranian economic interests by safeguarding the flow of commerce in the region from piracy and interdiction.[283,284]

The IRIN is geographically divided into four NDs, with the central IRIN headquarters in Tehran.

- **1st ND:** Headquartered at Bandar Abbas (Strait of Hormuz); also the location of the IRIN's Southern Forward Naval Headquarters (SFNHQ), which coordinates across all southern IRIN NDs
- **2nd ND:** Headquartered at Bushehr (Persian Gulf) and Jask (Gulf of Oman); 2nd ND HQ moving to Jask following 2007 reorganization

IRIN Order of Battle[285]

1805-17887

Class	Type	Inventory
Kilo	Attack submarine	3
Fateh	Coastal submarine	1
Yono (Ghadir)	Midget submarine	14
Nahang	Midget submarine	1
Jamaran (Mowj)	Corvette	3
Vosper Mk 5	Corvette	3
PF 103 (Bayandor)	Corvette	2
Combattante II (Kaman)	Fast attack craft, missile	13
Hendijan	Patrol craft, missile	3
PGM-71 (Parvin)	Patrol craft, missile	3
Cape (Kayvan)	Patrol craft, missile	3
U.S. Mk II	Patrol craft, coastal	6
U.S. Mk III	Patrol craft, coastal	10
C-14	Patrol craft, coastal	9
FB 40	Patrol craft, inshore	6
Hengham	Landing ship, tank	3
Karbala	Landing ship, logistic	6
Wellington Mk 4	Hovercraft	2
Wellington Mk 5	Hovercraft	4
Kharg	Replenishment ship	1
Bandar Abbas	Fleet supply ship	2
Delvar	Support ship	6
Hendijan	Tender	7
Shahsavar	Training ship	1

- **3rd ND:** Headquartered at Chah Bahar (Gulf of Oman)
- **4th ND:** Headquartered at Bandar Anzali (Caspian Sea)

One of the IRIN's key missions is to conduct out-of-area operations and naval diplomacy in the region and beyond. Since 2009, the IRIN has maintained near-continuous out-of-area naval deployments for counterpiracy operations in the Gulf of Aden, foreign port visits, and bilateral exercises with regional navies.

Despite its aging platforms, the IRIN has been moderately effective in maintaining readiness and sustaining operations. If the IRIN is to fulfill its longer term ambitions to function as a true blue-water navy, it will have to invest in more modern combatants and support ships. Iran has been able to domestically build corvettes and patrol boats for the IRIN and upgrade legacy platforms with new capabilities, including anti-ship cruise missiles (ASCMs). Despite its need for new auxiliaries, Iran has given no indication it is planning to invest in acquiring new support vessels. Iran acquired three Russian Kilo class attack submarines in the 1990s and began domestically producing North Korean Yono class midget submarines in the mid-2000s. Iran continues to invest in domestically developing and producing more-capable subsurface platforms, including larger coastal submarines.[286]



Iran's first domestically produced corvette, the *Jamaran*.

Image Source: AFP

The IRIN typically conducts a major national-level exercise each year called VELAYAT. The event usually entails a series of naval maneuvers involving IRIN surface combatants, submarines, and CDCM forces.[287,288]

Islamic Revolutionary Guard Corps Navy

The IRGCN, which comprises approximately 20,000 personnel, is tasked with protecting primarily the Iranian littoral. It employs an asymmetric doctrine that emphasizes speed, mobility, large numbers, surprise, and survivability and takes advantage of Iran's geography with the shallow and confined waterways of the Persian Gulf and Strait of Hormuz. Although the IRGCN has significantly upgraded its fleet in terms of size and lethality since the end of the Iran-Iraq War, it remains a force composed of smaller platforms. Rather than acquire larger ships as a more traditional navy might, the IRGCN has pursued smaller, faster vessels armed with a variety of weapon systems. Iran views acquiring these types of vessels in sufficient numbers will allow it to threaten foreign navies and overcome wartime attrition.

The IRGCN aims to overwhelm an adversary's defenses by using multiple platforms and weapons together to achieve tactical surprise. These



IRGCN small boats during a ceremony on 2 July 2012 to commemorate the downing of Iran Air Flight 655 by the USS *Vincennes* in 1988.

Image Source: AFP

systems include small boats armed with guns, rockets, torpedoes, and missiles; CDCMs; naval mines; and maritime special operations forces. IRGCN units train to use hit-and-run attacks against larger enemy naval vessels using swarms of small boats. The IRGCN could also restrict access or even attempt to fully close the Strait of Hormuz. Iran has modified a range of small boats to be able to deliver naval mines rapidly. In support of these goals, IRGCN acquisition efforts have focused on fielding a large fleet of faster and more-capable small boats; developing more-advanced ASCMs to be launched from sea, ground, or air; and building a large inventory of more-sophisticated naval mines.[289,290]

The IRGCN is geographically divided into five NDs, with the central IRGCN headquarters at Bandar Abbas.

- **1st ND:** Headquartered at Bandar Abbas (Shahid Bahonar); responsible for the Strait of Hormuz
- **2nd ND:** Headquartered at Bushehr; responsible for the north-central Persian Gulf
- **3rd ND:** Headquartered at Bandar Mahshahr; responsible for the northern Persian Gulf
- **4th ND:** Headquartered at Asaluyeh; responsible for the central Persian Gulf
- **5th ND:** Headquartered at Bandar Lengeh; responsible for the southern Persian Gulf, including the disputed islands of Lesser Tunb, Greater Tunb, and Abu Musa[291]

Many of Iran's NOBLE PROPHET exercises—the IRGC's typical large-scale annual exercise—are naval-focused with IRGCN elements leading the activities. IRGCN NOBLE PROPHETs are usually deterrent-themed events intended largely for strategic messaging, primarily aimed at the West and regional states.[292,293]

Major Naval Capabilities

Fast Attack Craft and Fast Inshore Attack Craft

The IRGCN is the primary operator of Iran's hundreds of fast attack craft (FAC) and fast inshore attack craft (FIAC). These platforms have been the mainstay of the IRGCN since its inception in the 1980s, although the Iranian FAC/FIAC inventory has grown significantly in terms of size and lethality since that time. Larger and more-capable, Iranian FAC are usually armed with ASCMs or torpedoes. The largest of these vessels are Iran's 10 Chinese-built Houdong missile boats acquired in the mid-1990s, which serve as the capital ships of the IRGCN fleet; these

IRGCN Order of Battle[294]

1805-17887

Class	Type	Inventory
Houdong (Thondor)	Fast attack craft, missile	10
Peykaap I	Patrol craft, coastal, torpedo	15
Peykaap II	Patrol craft, coastal, missile	25
Peykaap III	Patrol craft, coastal, missile	5
Mk 13	Patrol craft, coastal, missile	10
C-14	Patrol craft, coastal, missile	5
Tir	Patrol craft	10
Tarlan	Patrol craft, inshore	15
Kashdom II	Patrol craft, inshore	15
Ashoora	Patrol craft, inshore	Unknown*
Cougar	Patrol craft, inshore	Unknown*
FB RIB-33	Patrol craft, inshore	Unknown*
Gashti	Patrol craft, inshore	Unknown*
Kuch	Patrol craft, inshore	Unknown*
Bladerunner (Siraj)	Patrol craft, inshore	Unknown*
Boghammar	Patrol craft, inshore	20
Hormuz 21	Landing ship	2
Hormuz 24	Landing ship	3
Harth 55	Support ship	1
Safir Kish	Transport	3
Naser	Transport	3

*Note: The exact numbers for many Iranian small boat types are unknown, but the IRGCN has hundreds of small boats throughout the Persian Gulf.

vessels are frequently used in Persian Gulf and Strait of Hormuz patrols. Originally equipped with C802 missiles, Iran has since upgraded the Houdongs with extended-range Ghader ASCMs. Iranian FIAC, which are smaller but far more numerous, are lightly armed and usually fitted with only machine guns or rockets. Used en masse, these vessels can harass merchant shipping and conduct swarm tactics during a force-on-force naval engagements.



An Iranian Yono class midget submarine.

Image Source: AFP

Surface Combatants

The IRIN operates Iran's larger surface combatants, which include three 1960s-era British-built Vosper Mk 5 class corvettes and several French-built Combattante class patrol craft acquired before the Islamic Revolution. To expand the IRIN fleet, Iran has since domestically built several of its own Combattante patrol craft and three new Jamaran class corvettes, which closely resemble Iran's Vospers with modifications, such as an added helicopter flight deck. Iran has commissioned three of the vessels, including one on the Caspian Sea, which was severely damaged in early 2018.[295] The IRIN has also expanded its number of missile combatants by upgrading older auxiliaries and patrol ships with short- and medium-range ASCMs.

Submarines

Submarines are a critical component of the IRIN, which has undertaken an ambitious construction program to increase its subsurface production capabilities and expand its fleet. Iran has four classes of submarines in its order of battle. Iran's largest and most capable subsurface platforms are the three Kilo class attack submarines it purchased from Russia in the 1990s. The IRIN also has 14 North Korean-designed Yono class midget submarines, which it can arm with Iranian Valfajar heavy-weight torpedoes. In February 2019, Iran presented its first submarine-launched ASCM, the Jask-2, which can be launched from the Yono.[296] Iran also has a single domestically designed and produced Nahang midget submarine, which lacks torpedo tubes and may serve as a special operations platform.[297] Also in February 2019, the IRIN officially commissioned its first coastal submarine, the *Fateh*. Iran claims the Fateh class, Iran's largest domestically built submarine, can launch both torpedoes and ASCMs.[298]

Naval Mines

Mine warfare has been an integral part of Iran's naval strategy since the Tanker War. Iran has an estimated inventory of more

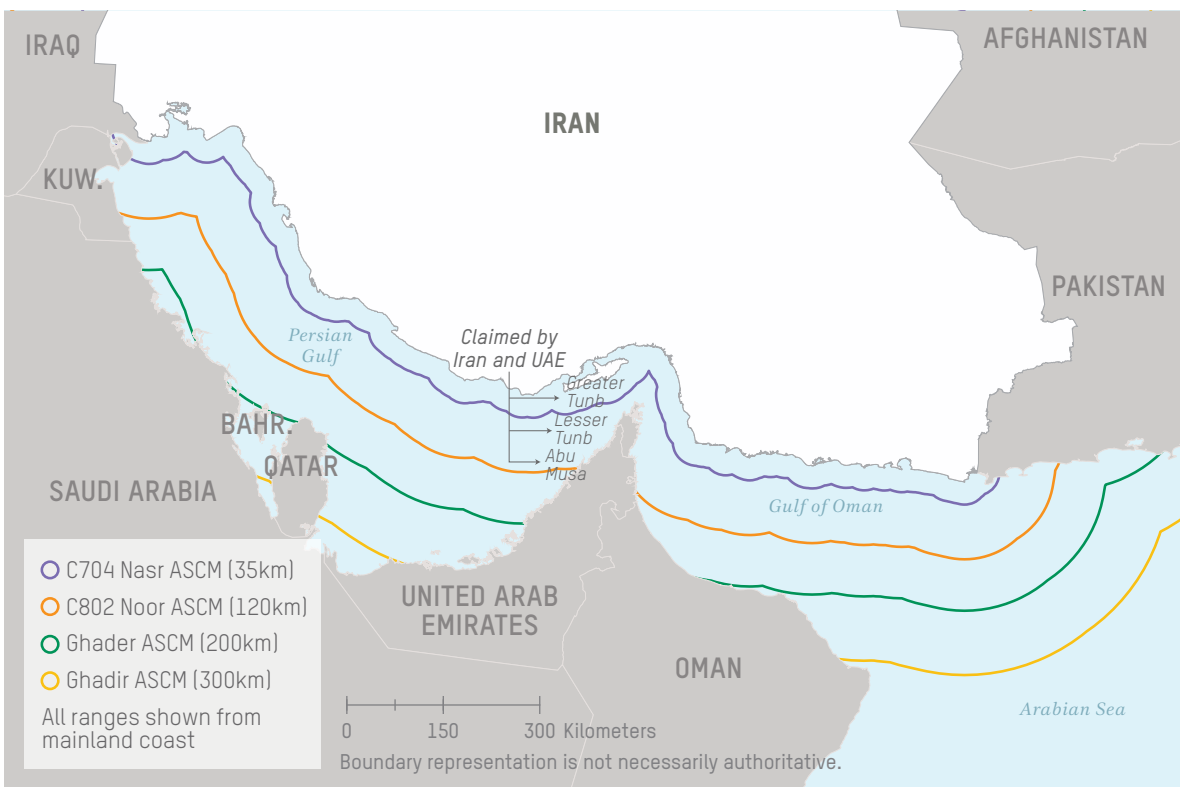
than 5,000 naval mines, which include contact and influence mines. Both navies have devised strategies to rapidly deploy mines while improving force survivability. Iran has a variety of vessels that can lay mines, but the IRGCN has integrated its doctrine of using smaller, faster vessels into its mine-laying strategy. Iran has equipped many of its Ashoora small boats with mine rails capable of holding at least one mine.[299,300]

Coastal Defense Cruise Missiles

CDCMs have been one of Iran's primary layers of defense for both navies to protect the country's littoral and maritime approaches. Iran initially gained experience with CDCMs using Chinese-built Silkworm missiles during the Tanker War. Both the IRGCN and IRIN operate CDCM forces, and Iran has invested greatly in developing and producing more-capable ASCMs, primarily based on Chinese

Iranian CDCM Ranges

1805-17885



Graphic Source: DIA, D3 Design

C802 and C700-series missiles. Based on its domestic copy of the C802, called the Noor, Iran has developed the 200-kilometer-range Ghader and the 300-kilometer-range Ghadir ASCMs.[301] Iran also domestically produces the 35-kilometer-range Chinese C704 ASCM as the Nasr.[302]



An Iranian C700-series CDCM is launched during an exercise in 2006.

Image Source: AFP

Antiship Ballistic Missiles

The IRGCASF has publicly announced and tested its ability to target ships with several ballistic missile models—including the Khalij Fars, Hormuz 1, and Hormuz 2—based on the Fateh-110 SRBM. These antiship ballistic missiles (ASBMs) have ranges of up to 300 kilometers and are equipped with terminal seekers that steer the missile to its target. These systems use a variety of seekers, including electro-optical and antiradiation homing.[303]



Iran's Khalij Fars ASBM.

Image Source: AFP

Appendix C: Unconventional Forces

Islamic Revolutionary Guard Corps Qods Force

Iran depends on a variety of unconventional and proxy forces to bolster its conventional military. The IRGC-QF (*Qods* meaning "Jerusalem") is Iran's primary means for conducting unconventional operations abroad, with connections of varying degrees to state and nonstate actors globally. It was founded in 1990 in the aftermath of the Iran-Iraq War as the IRGC unit responsible for covert operations and unconventional warfare operations abroad. Before the IRGC-QF's creation, a variety of government organizations, including the IRGC's Office of Liberation Movements, handled Iran's support to Islamic militant, terrorist, and resistance groups. Since its establishment, the IRGC-QF has become an increasingly professional unit trusted by the supreme leader to conduct operations outside Iran, provide support to Islamic militants, and collect intelligence against Iran's enemies. IRGC-QF personnel number roughly 5,000, though some estimates are higher.

Tehran uses the IRGC-QF to provide financial, training, and materiel support—including facilitating terrorist attacks—mainly to regional Shia militant groups ideologically aligned with Iran. These partner and proxy groups provide Iran with a degree of plausible deniability, and their demonstrated capabilities and willingness to attack Iran's enemies serve as an additional deterrent.



IRGC-QF Commander Qasem Soleimani during Ten Days of Dawn celebrations in 2016.

Image Source: AFP

Major General Qasem Soleimani commands the IRGC-QF and has a close relationship with Supreme Leader Ali Khamenei, often communicating with and taking orders from him directly. Soleimani oversees all IRGC-QF external operations, including support for active combat missions and clandestine activities. In recent years, he has traveled frequently to Iraq and Syria to support Iran's involvement in battlefield operations against ISIS and Syrian opposition groups, and has become one of Iran's most visible—and popular—military leaders.

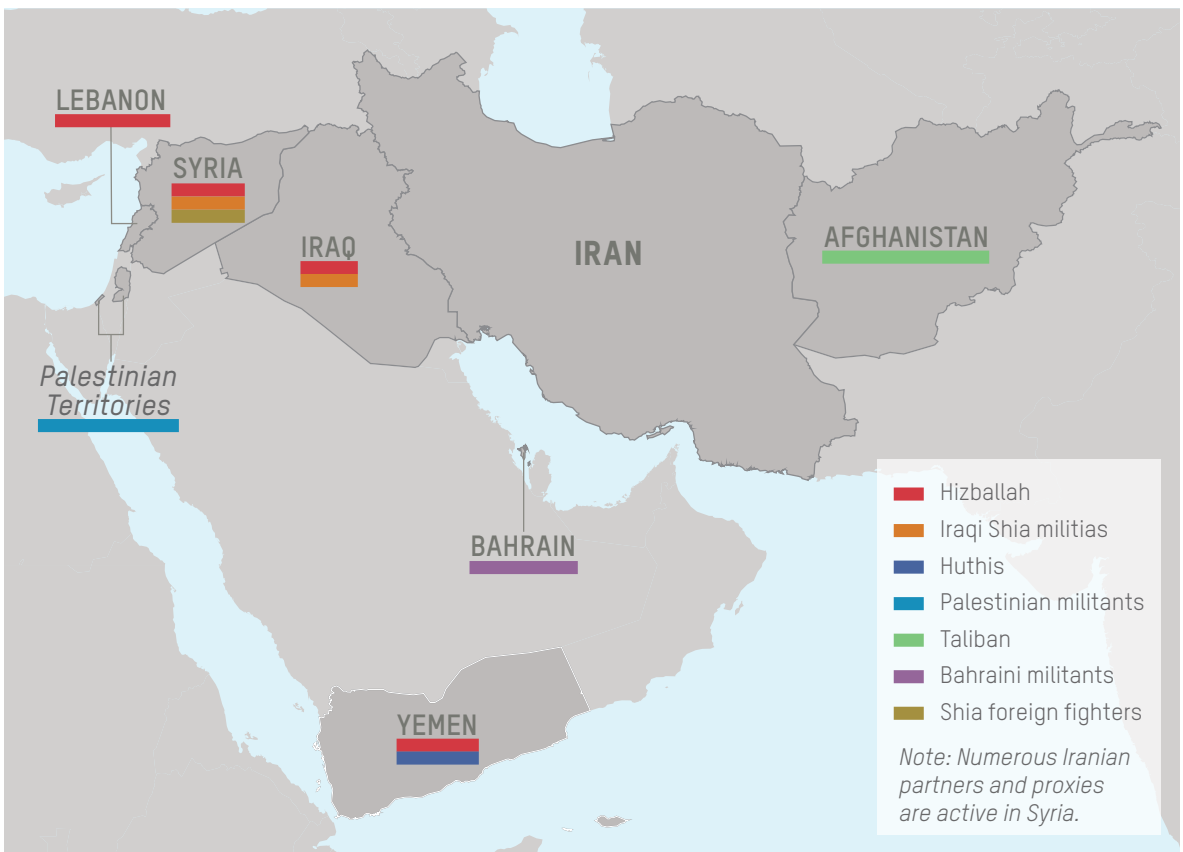
The IRGC-QF receives official funding from Iran's defense budget, but it augments its operating budget through a network of IRGC-QF-affiliated companies worldwide. The IRGC-QF and some affiliated companies have come under international sanctions because of their involvement in terrorist activities and weapons proliferation.[304,305,306,307,308]

Partners, Proxies, and Affiliates

The IRGC-QF maintains a wide and varied network of nonstate partners, proxies, and affiliates primarily in the Middle East. Iran provides a range of financial, political, training, and materiel support to these groups. Iran's provision of military hardware has included small arms, ammunition, explosives, improvised explosive devices (IEDs), explosively formed penetrators (EFPs), vehicles, antitank guided missiles (ATGMs), man-portable air defense systems (MANPADS), artillery, rockets, UAVs, and some more-advanced systems, such as ASCMs and ballistic missiles, despite UN resolutions prohibiting Iranian arms exports.[309]

Selected Iranian Partners, Proxies, and Affiliates

1805-17885



Graphic Source: DIA, D3 Design

Tehran's partners, proxies, and affiliates include Hizballah, Iraqi Shia militias, the Huthis, some Palestinian groups, the Taliban, and Bahraini militants. The level and type of support Iran provides to these groups depends on the nature of the relationship and the objectives Iran seeks to achieve. Stronger partners, such as Hizballah, are highly capable, reliable, and receptive to Tehran. Other groups, such as the Afghan Taliban, are less receptive to Iranian guidance but still help further Iran's regional objectives because they combat common enemies.[310,311,312]

Hizballah

Hizballah is Iran's most important and longest-standing nonstate partner and a core member of Tehran's "Axis of Resistance." Shared goals, ongoing personal relationships, and enduring ideological, cultural, and religious ties have contributed to the strength of the partnership. The IRGC-QF has collaborated closely with Hizballah to grow Iran's influence and capacity throughout the region and beyond, using the group to help train and equip other proxies. Iran has attempted to help temper international perceptions of Hiz-



Supporters wave Hizballah flags in front of portraits of Hizballah Secretary General Hassan Nasrallah (left) and Supreme Leader Khamenei (right).

Image Source: AFP

ballah as a terrorist organization and increase Hizballah's legitimate political standing in Lebanon. In recent years, both groups have focused their cooperation on immediate needs in Syria and Iraq.[313]

Hizballah, a highly adaptable and malleable organization, has evolved from its insular origins as a sectarian actor in Lebanon into a far more complex regional actor. Hizballah's role in Lebanon—in its formal political institutions, as a social provider for Shia society and as a self-proclaimed defender against Israeli aggression—primarily defines its reason for existence. However, the group has increasingly defined its other regional activities—including involvement in Syria, Iraq, and Yemen—as working in concert with its internal Lebanon-centric goals. This concept of Hizballah as a regional power directly contradicts Lebanon's policy of disassociation and has increased sectarian tensions at home.[314]

Hizballah has steadily grown as a military power during the past several decades. Asymmetric attacks against Israel in the 1980s and 1990s, followed by a major conflict in 2006, initially confirmed Hizballah's self-imposed title as a "resistance" force against Israel. Since the 2006 Israel-Hizballah War, Hizballah has steadily increased its military arsenal, promising that any future conflict will be more devastating. Hizballah's concentration of power has allowed it to transform from a hybrid guerilla force into a nascent conventional military, with the capacity to deploy an expeditionary force in Syria in support of the Asad regime and Iran. Hizballah maintains a stockpile of approximately 120,000–150,000 rockets, a massive expansion in capability compared with the approximately 13,000 it had available during the 2006 conflict.[315] Hizballah has an estimated 45,000 fighters, divided between as many as 21,000 full-time personnel and a 24,000-person reserve force.[316]

Iraqi Shia Militias

One of Tehran's strongest levers of influence in Iraq is through the many Iran-backed Shia militias. Iran has provided financial backing for some of these groups for decades. The Badr Organization, Asaib Ahl al-Haq, and Kataib Hizballah have long served as reliable partners for Tehran, including conducting attacks on U.S. military personnel in Iraq from 2003 to 2011 using Iranian-provided munitions. Following ISIS's widespread territorial gains in Iraq in mid-2014 and the subsequent formation of the Popular Mobilization Forces (PMF), Iran sent IRGC advisers, weapons, and other military support for the PMF and Iraqi counter-ISIS operations.[317]

Since 2011, the IRGC-QF has also deployed these Shia militants outside Iraq in support of Iranian interests. Since at least 2013, Iraqi Shia militias have greatly expanded their strength, influence, and combat capabilities, owing largely to Iranian support and their experience fighting in Iraq and Syria. Shia militias under the Popular Mobilization Committee (PMC) played a leading role in counter-ISIS operations in Iraq, and the majority of these groups have had elements fighting in Syria at Iran's behest as part of Syrian pro-regime forces. During the counter-ISIS campaign, Shia militias staffed more than 50 PMF brigades under the PMC. There are an esti-

Shia Foreign Fighters

To support its operations in Syria, Iran has employed a variety of Shia foreign fighters from the region, including the Fatemiyun, Zeinabiyun, and Heidariyun, who are fighters of Afghan, Pakistan, and Iraqi origin, respectively. The Fatemiyun and Zeinabiyun are recruited primarily from refugee populations in Iran, while the Heidariyun generally come from established Iraqi Shia militias. These groups have served as a proxy force to fight alongside proregime forces in Syria under the direction of the IRGC-QF and Hizballah. Before being sent into combat, these foreign fighters receive basic training in military skills from Iran or Hizballah. Training usually lasts only 20–45 days, although some fighters reportedly receive additional specialized training, such as sniper courses. Tehran is likely to continue using these fighters in Syria, and it is unclear if there are plans to deploy them to other locations.[321,322,323,324]

mated 75,000–145,000 mainly Shia fighters active in more than 35 Iraqi militias.[318,319,320]

Huthis

Iran probably sees supporting the Huthi rebels in Yemen as a low-cost, high-reward opportunity to indirectly confront Saudi Arabia, embarrass Riyadh militarily, and establish an ally on the Arabian Peninsula.[325] Iran provides a wide range of support—including advisers, training, and lethal aid—to the Huthis to support their operations against the Saudi-led coalition in the Yemen conflict.[326] Tehran claims Riyadh is the aggressor and the cause of the humanitarian crisis in Yemen and has refuted accusations that it is supporting the Huthis with missiles and other advanced military equipment.[327]

Estimates of Huthi fighters range from 10,000 to 30,000 personnel consisting of core believers, tribal supporters, and familial alliances.[328,329] The Huthis seek to rule the northern Yemen region or, at a minimum, retain a dominant role in northern Yemen and substantial political and military influence in any future government.[330] Huthi leaders seek to use negotiations, international pressure, military operations, and ballistic missile and maritime attacks to pressure the Saudi-led coalition into accepting settlement terms favorable to the Huthis.



Debris from an Iranian Qiam SRBM provided by Iran to the Huthis that was fired into Saudi Arabia on display at Joint Base Anacostia-Bolling in Washington, DC. The numbered placards identify the unique positioning of valves on the missile's propellant tanks.

Image Source: DVIDS

The Huthis depend on Iran for military equipment and support, including ballistic missiles, UAVs, and explosive boat technology. Tehran is using covert means to support this effort while publicly denying its military involvement in Yemen. Although the Huthis have always maintained a sense of identity as Shia Zaydis and Yemenis, they probably are receptive to further strengthening ties with Iran.

Huthi forces hold and defend territory in northern Yemen, disrupt Saudi-led coalition movement and supply efforts, and conduct retaliatory and offensive strikes against the coalition. Huthi fighters are armed with small arms, artillery, and tanks from preconflict Yemeni stockpiles.[331] Iranian-supported Huthi missile forces have conducted multiple ballistic missile attacks against Saudi Arabia—with targets including the capital, Riyadh, and a Saudi oil refinery—using Iranian SRBMs. Huthi maritime forces have ASCMs, naval mines, manned and unmanned explosive boats, and other small boats used for small-arms attacks.[332,333] The Huthis possess most of the surface-to-air missiles (SAMs) from Yemen's prewar stockpiles and have modified air-to-air missiles (AAMs) for use as SAMs. In 2018, Saudi-led coalition forces also seized advanced Iranian SAMs en route to the Huthis during countersmuggling operations.[334] The Huthis have also used Iranian UAVs to attack Saudi-led coalition Patriot batteries.[335]



Australian HMAS *Darwin* interdicts a dhow in the Gulf of Oman with Iranian arms intended for the Huthis.

Image Source: Commonwealth of Australia

Palestinian Militant Groups

Iran provides support—including training, funding, and military equipment—to HAMAS and other Palestinian groups because of their strategic location and shared hostility toward Israel. Tehran seeks to increase international support in favor of a Palestinian state and desires to be seen as a stronger champion of Palestinians than its Arab rivals, such as Saudi Arabia. However, these primarily Sunni groups are not always receptive to Iranian guidance. During the past year, some Palestinian militant groups, particularly HAMAS, have improved ties to Iran. Relations had deteriorated after 2011, as most Palestinian militant groups refused to support the Asad regime in the Syrian civil war.

HAMAS, the Palestine Islamic Jihad (PIJ), and the Popular Front for the Liberation of Palestine–General Command (PFLP-GC) share some common capabilities to conduct both limited conventional military operations, such as cross-border ATGM attacks and rocket salvos, and terrorist attacks, such as kidnappings and suicide bombings. HAMAS is the best-armed Palestinian militant group with around 25,000 active members in its mil-

itary wing. PIJ has around 8,000 militants, and PFLP-GC numbers around 800 militants. These groups use a variety of small and heavy arms, including antiarmor weapons and small- to mid-range rockets.[336,337,338,339]

Taliban

Iran's relationship with the Taliban has evolved over the years. Following the Taliban's rise to power in the 1990s, Iran refused to recognize the group as a legitimate government. In 1998, Iran nearly went to war with Afghanistan after the Taliban captured and killed nine Iranian diplomats. However, relations began to thaw after the U.S. invasion of Afghanistan. Since at least 2007, Iran has provided calibrated support—including weapons, training, and funding—to the Taliban to counter U.S. and Western influence in Afghanistan, combat ISIS-Khorasan, and increase Tehran's influence in any post-reconciliation government. Iran balances this support as part of its dual-track strategy for engaging both local groups and the Afghan government in Kabul to achieve its broader security goals. Tehran does not seek to return the Taliban to power but aims to maintain influence with the group as a hedge in the event that the Taliban gains a role in a future Afghan government.[340,341,342,343]

Appendix D: Air and Air Defense Forces

Iran's air and air defense capabilities are split primarily across three services: the Islamic Republic of Iran Air Force (IRIAF) and the Islamic Republic of Iran Air Defense Force (IRIADF), both under the Artesh, and the IRGCASF. The Khatemolanbia Air Defense Headquarters (KADHQ) is the national-level command responsible for coordinating between the IRIADF and IRGCASF.

Islamic Republic of Iran Air Force

Before the 1979 Islamic Revolution, the shah invested heavily in equipping the Imperial Iranian Air Force with modern combat air capabilities, viewing the service as a symbol of Iran's strength and security. After decades of international sanctions following the revolution and combat losses during the Iran-Iraq War, many of the U.S. aircraft Iran acquired during the 1960s and 1970s still constitute the most-capable platforms in the IRIAF today. Iran later acquired some Soviet-made aircraft during the early 1990s.



Iranian F-4s, which it acquired from the United States prior to the Islamic Revolution.

Image Source: AFP

The IRIAF has proven adept at maintaining these outdated aircraft to sustain routine flight operations. Despite some domestic efforts to upgrade older airframes, Iran's combat aircraft remain significantly inferior to those of its regional adversaries equipped with modern Western systems. Nevertheless, the IRIAF maintains a basic capability to achieve its assigned missions.

The IRIAF has approximately 37,000 personnel and operates the majority of Iran's combat aircraft. The IRIAF operates multiple combat, transport, and tanker squadrons across 11 major fighter bases. The commander of the IRIAF is Brigadier General Aziz Nasirzadeh.

The IRIAF operates a wide range of aircraft sourced from the United States, Russia, and China, including the U.S. F-14 Tomcat, F-4 Phantom II, and F-5 Tiger II; the Russian MiG-29 Fulcrum and Su-24 Fencer; and the Chinese F-7 Airguard. Iran is the only country in the world still operating F-14s. IRIAF missions include air intercept, ground-attack, and close air support, and some aircraft are capable of mid-air refueling. The IRIAF's F-4s serve as Iran's primary attack aircraft, but it has increasingly incorporated use of its Su-24

Iranian Fighter Bases

1805-17885



Graphic Source: DIA, D3 Design

1st FB	MiG-29, C-130, B707 (cargo and tanker), B747 (cargo and tanker), Falcon 20, Jetstar, RC-707, RC-130, IL-76, An-74	**8th FB**	F-14A/AM, F-7/FT-7N, PC-7
2nd FB	MiG-29, F-5E/F, Saeghe I/II (Iranian F-5 variants)	**9th FB**	F-4E, P-3
3rd FB	F-4E, RF-4E	**10th FB**	F-4D, Mirage F1
4nd FB	F-5E/F	**Omidiyeh Air Base**	F-7N
6th FB	F-4E	**Mashhad Air Base**	F-5E/F
7th FB	Su-24MK, C-130, P-3, IL-76, Su-22, Y-12		

Major Iranian Combat Aircraft[347]

1805-17887

Platform	Delivered to Iran (Origin)	Role
F-4D/E Phantom II	1968-1978 (USA)	Multirole Fighter
F-5E/F Tiger II (and later Iranian variants)	1973-1976 (USA)	Multirole Fighter
F-14A/AM Tomcat	1976-1978 (USA)	Fighter
Su-22 Fitter	1991 (Iraq)	Fighter-Bomber
Su-24MK Fencer	1990 (Russia); 1991 (Iraq)	Fighter-Bomber
MiG-29 Fulcrum A	1990 (Russia); 1991 (Iraq)	Multirole Fighter
Mirage F1	1991 (Iraq)	Multirole Fighter
F-7N Airguard	1987-1996 (China)	Multirole Fighter

fighter-bombers. Although less capable in an attack role, Iran's F-5s and F-7s have also served as multirole platforms.[344,345,346]

The IRIAF usually conducts one major national-level air power exercise each year, called DEVOTEES OF THE VELAYAT SKIES. The event traditionally entails a ground-attack competition among multiple fighter bases and features fighter intercept, air-to-air engagement, electronic warfare (EW), and intelligence, surveillance, and reconnaissance (ISR) training.[348,349]

Once the UN arms embargo ends, the IRIAF is likely to purchase advanced fourth-generation fighters, most likely from Russia. Tehran and Moscow have already discussed the sale of Su-30s to Iran.[350]

Islamic Revolutionary Guard Corps Aerospace Force

The IRGCASF was founded in 1985 when Supreme Leader Khomeini established the IRGC's three distinct ground, air, and naval services.[351] Previously named the IRGC Air

Force, Iran renamed the service in 2009 to reflect its broader mission.[352] Dating back to the Iran-Iraq War, rivalries between the IRGCASF and IRIAF have historically hindered cooperation between the two air services.[353] The IRGCASF also operates Iran's ballistic missile force, the Al-Ghadir Missile Command. *[For more details on Iran's missile force, see Appendix A.]*

The IRGCASF is a relatively small force of around 15,000 personnel. It provides close air support and lift capabilities with military aircraft and helicopters as well as commercially owned aircraft under the IRGCASF's control. Although the IRGC's manned aviation component historically focused on airlift and logistic support, its mission evolved to include a squadron of its own combat aircraft after Iran began incorporating Iraqi aircraft evacuated to Iran in 1991 during the First Gulf War. The commander of the IRGCASF is Brigadier General Amir Ali Hajizadeh.

The aviation arm of the IRGCASF maintains a fleet that includes Su-22 Fitters, EMB-312 Tucanos, Y-12s, Dassault Falcon 20s, MFI-17s, IL-76s, and An-74s. In 2014, Iran supplied Iraq with most of the Su-25 Frogfoots that the IRGCASF had maintained since Iraq transferred them to Iran in 1991. Iran still maintains a small number of Su-25 aircraft.[354,355,356, 357]

UAVs are Iran's most rapidly advancing air capability. Iran uses these versatile platforms for a variety of missions, including ISR and air-to-ground strikes. The IRGCASF is the primary operator of Iran's growing fleet of UAVs, although most Iranian military services employ them. Iran regularly conducts ISR flights along its border and littoral, including the Persian Gulf and Strait of Hormuz. The IRGCASF has also deployed various armed and unarmed UAVs to Syria and Iraq for ISR and strike missions to support counter-ISIS operations and the Syrian regime. In 2018, Iran for the first time employed UAVs to conduct long-range, cross-border strike operations, using armed



An IRGCASF Su-25 during a naval exercise in 2006.

Image Source: AFP



Newly built Iranian Shahed-129 armed UAVs on display in September 2013.

Image Source: AFP

Major Iranian UAVs[363,364]

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Platform Family	System	Role
Ababil	Ababil-2	Multirole
	Ababil-3	ISR
	Qasef-1	Multirole
Shahed	Shahed-129	Multirole, including ISR and air-to-ground strike[365,366]
	Shahed-123	ISR
Mohajer	Mohajer-2	ISR
	Sadegh	Multirole
	Mohajer-4	ISR
	Mohajer-6	Multirole, including ISR and air-to-ground strike[367]
Toufan	Toufan 1	One-way attack
Fotros	Fotros	Multirole, including ISR and air-to-ground strike[368,369]
Karrar	Karrar	Multirole
Hemaseh	Hemaseh	Multirole
IRN-170	IRN-170 variants	Multirole

UAVs in concert with ballistic missiles as part of a retaliatory attack against ISIS in eastern Syria. Iran has also provided UAV platforms and technology to Hizballah and the Huthis to challenge its regional rivals.[358,359,360,361,362]

The IRGCASF also maintains its own air defense assets and mission—conducted in parallel, but coordinated with the IRIADF and KADHQ. The IRGC has been involved in the domestic development and production of many recent Iranian SAM systems—such as the Raad series, Sayyad series, Tabas, and Third of Khordad—which reportedly have multi-target capabilities and ranges up to 120 kilometers.[370,371] In June 2019, the IRGCASF used a Third of Khordad SAM system to shoot down a U.S. RQ-4 UAV in international airspace over the Strait of Hormuz.[372,373] This followed an Iranian attempt to shoot down a U.S. MQ-9 UAV in international airspace over the Gulf of Oman a week earlier.[374]

The IRGCASF sometimes participates in the IRGC's typical annual national-level exercise, NOBLE PROPHET, although these usually focus on demonstrating missile, naval, or ground forces capabilities.[375] In 2017, the IRGCASF conducted its own air defense exercise called DEFENDERS OF VELAYAT SANCTUM.[376]

Islamic Republic of Iran Air Defense Force

Iran originally established the Artesh's air defense force in 2008 as the KADHQ and renamed it the IRIADF in 2019. In 2008, air defense personnel were separated from the IRIAF to form an independent service within the Artesh, consistent with Tehran's goal to expand defense missions in response to a perceived increase in air threats. The IRIADF maintains and operates most of the country's air defense systems and has approximately 15,000 personnel.[377,378]



Iranian SA-20c mobile launcher on parade for Artesh Day in 2017.

Image Source: AFP

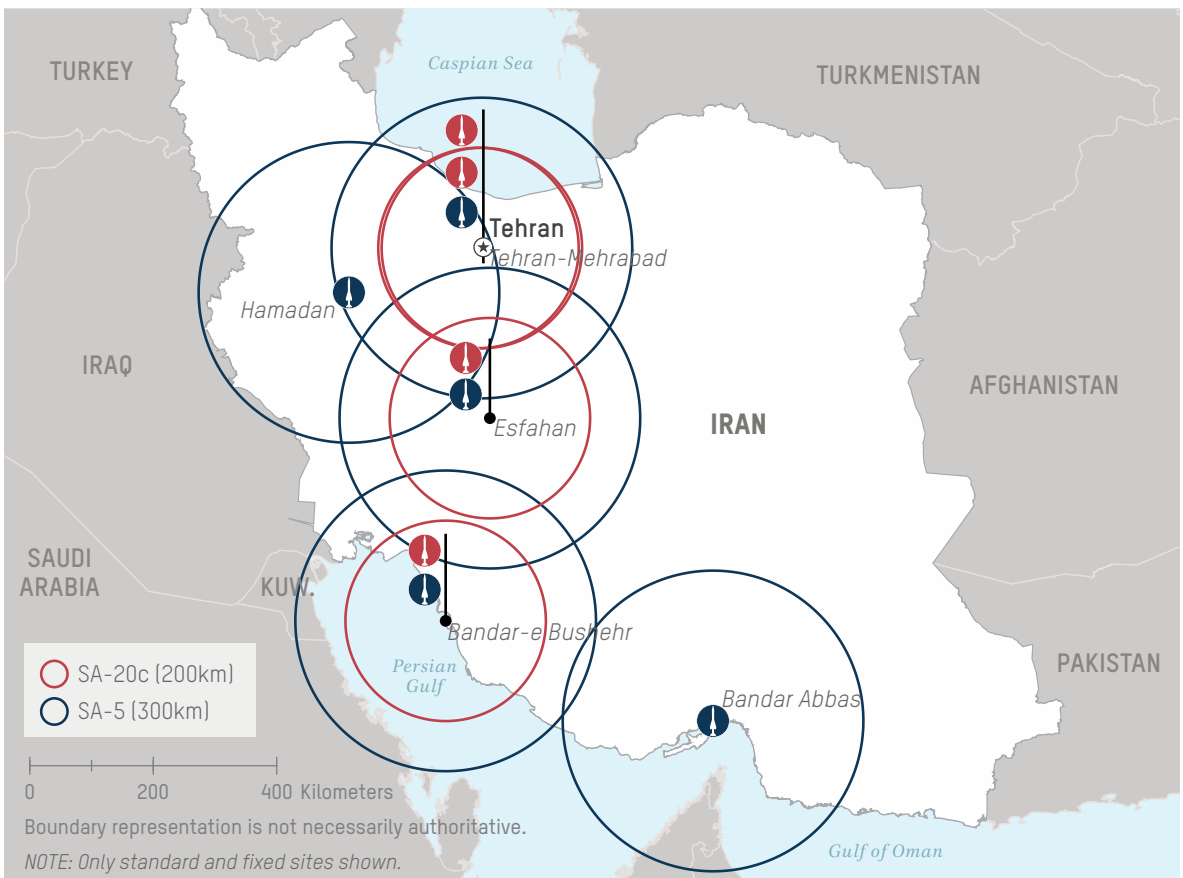
As the KADHQ, the force was previously responsible for overseeing Iran's air defenses at the national level and coordinating with the IRGCASF. In May 2019, Tehran elevated the KADHQ to a higher echelon command and rebranded the remaining Artesh air defense service as the IRIADF, separating the national C2 responsibilities from the force. The supreme leader appointed Artesh Commander Major General Abdolrahim Musavi to also serve as commander of the KADHQ, raising it to the Artesh HQ level. Former KADHQ Commander Brigadier General Alireza Sabahifard was retained as the IRIADF commander.[379]

Khatemolanbia Air Defense Headquarters

The KADHQ maintains responsibility for overseeing and coordinating Iran's national-level air defenses across both the IRIADF and IRGCASF. It controls the country's air defense C2, air surveillance radars, SAM systems, and network of visual observation posts. KADHQ C2 is centralized during peacetime at the national Air Defense Operations Center and can be decentralized during crisis or conflict, transferring decisionmaking authority down to a network of fixed and mobile regional sector operations centers (SOCs). SOCs manage air defense operations within their areas of responsibility and coordinate with adjacent sectors.[380,381,382]

Long-Range Air Defense Coverage

1805-17885



Graphic Source: DIA, DS Design

Iranian Air Defense Systems[391,392,393]

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Type	Systems
Long-Range	SA-20c Gargolye (S-300 PMU2), SA-5 Gammon (S-200), Bavar-373, Sayyad-3
Medium-Range	I-HAWK/Mersad, CSA-1, Third of Khordad, Raad, Talash, Sayyad-1, Sayyad-2
Short-Range	SA-15 Gauntlet (Tor M1), Rapier

The IRIADF operates Iran's most capable air defense system, the SA-20c, which Russia sold to Iran in 2016. This system is highly mobile and designed to defend against aircraft, ballistic missiles, and cruise missiles. Iran is most likely to use the SA-20c to protect its most critical infrastructure, such as its nuclear sites and Tehran. Most of Iran's other SAMs are a mix of U.S., Russian, and Chinese legacy systems, including the long-range SA-5, medium-range I-HAWK and CSA-1, and short-range SA-15 and Rapier.[383,384]

In addition to procurements from abroad, Iran has invested heavily in domestically developing and producing SAMs, radars, and C2 systems.[385] Iran is developing the long-range Bavar-373 SAM system, which it claims is more advanced than the Russian S-300.[386] Iran has also undertaken a number of projects to domestically improve its legacy SAMs, including the Mersad, a medium-range air defense system that improves the tracking and engagement range of the U.S.-made I-HAWK SAM.[387] Iran has also worked extensively to upgrade its legacy C2 systems to a modern, software-based system.[388]

Iran's typical annual national-level air defense exercise is called DEFENDERS OF THE VELAYAT SKIES. The event usually involves testing and live fires of variety of SAMs, radars, and ISR and EW equipment, along with a small contingent of aircraft, to exercise a large-scale defense of Iranian airspace.[389,390]

Appendix E: Ground Forces

Iran maintains two independent ground forces: the Islamic Republic of Iran Ground Force (IRIGF) under the Artesh and the IRGC Ground Force (IRGCGF) under the IRGC. Despite deploying some ground forces to Iraq and Syria in recent years, their mission continues to focus primarily on Iran's territorial defense and internal security.[394] The IRGC also oversees Iran's reserve paramilitary force, the Basij, which comprises some units aligned with the IRGCGF as well as the larger Basij Organization of the Oppressed. *[For more details on the Basij, see Appendix G.]*

Islamic Republic of Iran Ground Force

The IRIGF maintains approximately 350,000 soldiers and serves as Iran's first line of defense against an invading force.[395] Many of its personnel consist of conscripts who serve for 2 years.[396] The IRIGF consists of about 50 combat arms brigades, many of which are light infantry units with a sizable contingent of armored and mechanized infantry units. The IRIGF also has its own special operations units and several artillery groups for fire support. Most units are concentrated along



IRIGF soldiers march in formation during the Artesh Day parade in 2018.

Image Source: AFP

IRIGF Regional Headquarters

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the Iran-Iraq border, reflecting the force's primary mission to defend against foreign invasion. The IRIGF commander is Brigadier General Kiomars Heidari.

For more than a decade, the IRIGF has focused on improving its abilities to defend against a technologically superior enemy. In 2011, the IRIGF began a service-wide reorganization, transitioning from a division-centric to a brigade-centric structure. This transformation was intended to decentralize C2 and enable main force units to operate with greater flexibility and mobility. Under this model, the IRIGF is better postured to conduct counteroffensives against a superior invading adversary, giving brigade commanders the ability to act independently while decreasing response times. The IRIGF also has five regional headquarters, each of which is responsible for multiple provinces.[397,398,399]

IRIGF units generally are organized with three main subordinate units per higher echelon unit. For example, each infantry brigade usually consists of three infantry battalions, each armored brigade usually consists of two armored battalions and a mechanized infantry battalion, and

each mechanized infantry brigade generally consists of two mechanized infantry battalions and an armored battalion.[400,401]

The IRIGF also has an Army Aviation (AA) component, called Islamic Republic of Iran Army Aviation (IRIAA), which serves as Iran's primary helicopter force, with about 90 percent of the helicopters in the Iranian ground forces. The IRIAA has several hundred attack, transport, and reconnaissance helicopters in its inventory—including AH-1 Cobras, Bell 214s, CH-47 Chinooks, and AB 206s—nearly all of which are legacy U.S. platforms that predate the Islamic Revolution.[402]

In 2016, the IRIGF began deploying a small number of personnel to support combat operations in Syria. Although Iran claimed they were sent in an advisory capacity, press reports indicate they have played an active role in combat operations. This marked the first Artesh deployment abroad since the Iran-Iraq War.[403,404]



Iranian M-109 self-propelled artillery.

Image Source: Iranian Students News Agency (ISNA)

The IRIGF usually holds two major annual exercises each year. The MUHAMMAD RASULOLLAH exercises occur along Iran's border and coastal regions, emphasizing either a defense against a conventional military invasion or counterterrorism operations.[405.406] The BEIT OL-MOQADDAS exercises typically occur in May near Esfahan. The IRIGF often uses these events to unveil new ground forces equipment and as a capstone exercise for graduating cadets.[407]

Islamic Revolutionary Guard Corps Ground Force

The IRGCGF is the largest component of the IRGC, consisting of approximately 150,000 personnel. In addition to its conventional military role of protecting Iranian territory against external threats, the IRGCGF along with the IRGC's paramilitary reserve component, the Basij, also have responsibilities to counter internal threats. For many years, the IRGCGF has regularly conducted counterinsurgency missions against Kurdish militants along Iran's northwest border and Baluchi militants in the southeast. Since as early as 2012, IRGCGF units have deployed to support combat operations in Syria and Iraq, with a surge of IRGCGF soldiers sent to Syria in 2015.[408,409410] The commander of the IRGCGF is Brigadier General Mohammad Pakpur.[411]

The IRGCGF is structured with 31 provincial corps and a Tehran city corps, which are postured to counter ground invasion and internal unrest, along with independent conventional maneuver formations, such as infantry and armor. The IRGCGF consists of primarily light infantry and commando units, fairly evenly distributed around



An IRGCGF tank crew salutes from a T-72 during the annual Holy Defense Week parade in 2014.

Image Source: AFP

the country, particularly owing to the internal security aspects of its mission set. Its artillery batteries employ towed- and self-propelled guns and multiple rocket launchers (MRLs) while its air defense groups mainly use Soviet-origin mobile antiaircraft artillery. IRGCGF armored units use 1970s-era Soviet tanks and tracked vehicles, as well as pre-1979 U.S.-imported tanks. The IRGCGF also maintains special operations forces, called *Saberin* ("patient ones").[412] In 2016, the IRGCGF established its own AA component, transferring helicopters from the IRGCASF. The new unit provides the IRGCGF with its first organic helicopter support.[413]

Many iterations of the IRGC's main annual exercise series—NOBLE PROPHET—incorporate IRGCGF elements demonstrating defensive operations against a potential invading force. The IRGCGF also frequently uses these exercises to test or display new military hardware.[414,415]

Key Ground Forces Equipment[416,417,418]

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System	Approx. Total	Most Capable	Source
Tanks	1,900	T-72S	Russia
Armored Vehicles	2,600	BMP-2	Russia
Self-Propelled Artillery	400	M-109	USA
Towed Artillery	2,900	GHN-45	Austria
Multiple Rocket Launchers	2,000	Fajr-5	Iran

Appendix F: Special Operations Forces

The Artesh and IRGC both maintain ground-based special operations forces (SOF) and maritime special operations forces (MARSOF) of varying levels of capability. Within the Artesh, IRIGF SOF include commando, airborne, and special forces brigades, and the IRIN operates a Special Boat Service (SBS) unit. Within the IRGC, IRGCGF SOF include commando and special forces brigades in addition to an elite special unit; the IRGCN also operates a MARSOF unit.

Islamic Republic of Iran Ground Force SOF

The IRIGF has three types of SOF units—airborne, commando, and special forces. These include several commando brigades, the 55th Airborne Brigade, the 35th Special Forces Brigade, and the 65th Airborne Special Forces Brigade. Of these units, the 65th, also known as the *NOHED* (Persian abbreviation for "airborne special forces") brigade, is the most elite. The 55th and 65th are jump-qualified, and commando brigades deploy via airmobile insertion.[419] Several commando brigades have recently transitioned into special forces and rapid reaction brigades, including the 35th and 25th.[420,421]

Iran's first SOF units formed in the late 1950s under the tutelage of U.S. advisers. During the Iran-Iraq War, SOF units expanded to meet operational requirements. IRIGF SOF would regularly conduct reconnaisance of enemy lines to identify weak points and launch night attacks to initiate major offensive operations. Iranian airborne brigades also conducted airmobile operations in advance of Iranian offensives to seize key objectives and overrun enemy forces in rear areas.[422]

Based on their U.S. Army Special Forces lineage, IRIGF SOF share similar mission sets, probably including unconventional warfare, foreign internal defense, special reconnaissance, direct action, and hostage rescue. Some of these units also provide a quick-reaction force that can deploy rapidly anywhere inside Iran or potentially abroad.[423] As of April 2016, Iran had deployed personnel from the 65th Airborne Special Forces Brigade to Syria, part of the IRIGF's first external deployment since the Iran-Iraq War.[424]

Islamic Republic of Iran Navy MARSOF

The IRIN operates an SBS based on the British Royal Navy SBS, which provided training for IRIN special forces personnel before the Islamic Revolution. The IRIN SBS probably is trained in a variety of capabilities, including combat diving, parachuting, amphibious assault, airborne assault, underwater demolitions, special reconnaisance, and maritime visit, board, search, and seizure (VBSS) operations. IRIN SBS personnel are also capable of covert insertion from the IRIN's midget submarines.[425,426,427]

IRGC Ground Force SOF

The IRGCGF maintains several SOF units—called *Saberin* ("patient ones")—including the 110th Salman Farsi Commando Brigade, the 33rd Al Mahdi Airborne Special Forces Brigade, and the elite Saberin Special Forces Brigade (or Saberin Special Unit). Some regular IRGCGF divisions and brigades at the provincial level also have dedicated Saberin detachments directly subordinate to them.[428]

The IRGCGF is upgrading select SOF units, transforming commando units into special forces units. The 33rd Al Mahdi Brigade also transitioned from an airborne to a special forces brigade. With these changes, Iran is attempting to create a more agile and responsive force, particularly following the rise of ISIS and Iranian combat deployments to Syria.[429,430]

IRGCGF Saberin units are highly trained in specialized capabilities, such as raiding, hostage rescue, and heliborne assault. Some Saberin personnel use ultralight aircraft and are capable of conducting operations in a wide range of terrain and environmental conditions, including mountains, deserts, and swamps. Saberin have also deployed to Syria to support Iranian combat operations.[431,432,433]



IRGCGF SOF during an exercise in April 2006.

Image Source: AFP

IRGC Navy MARSOF

The IRGCN has a MARSOF component known as the Sepah Navy Special Force (SNSF). The unit is based on Forur Island, strategically located near the Strait of Hormuz. SNSF personnel train in combat diving, direct action, counterterrorism, special reconnaissance, underwater demolitions, amphibious assault, hostage rescue, and maritime VBSS operations. Among the unit's missions is to protect Iranian commercial vessels, and SNSF personnel have deployed to the Gulf of Aden to assist with Iranian counterpiracy operations.[434]

Appendix G: Reserves

Iran established its volunteer paramilitary reserve force, called the *Basij* ("mobilization" in Persian), in April 1980 after Supreme Leader Khomeini called for the creation of a 20 million-man army following the 1979 Islamic Revolution. During the Iran-Iraq War, the Basij deployed alongside the IRGC and regular forces. They became known for "human wave" assaults and martyrdom and suffered a large proportion of the total combat casualties during the war. It was incorporated into the IRGC structure in 1981, but it did not come under formal IRGC command until 2007. These changes brought about greater unit discipline and a formal rank structure. In 2009, Iran further integrated the more militarily capable components of the Basij with the IRGCGF, with the remaining personnel forming the much larger Basij Organization of the Oppressed (BOO), which focuses on domestic security and social outreach. The force is composed of mostly young male and female Iranians who volunteer often in exchange for official benefits.[435,436]



Basij personnel during an exercise in September 2015.

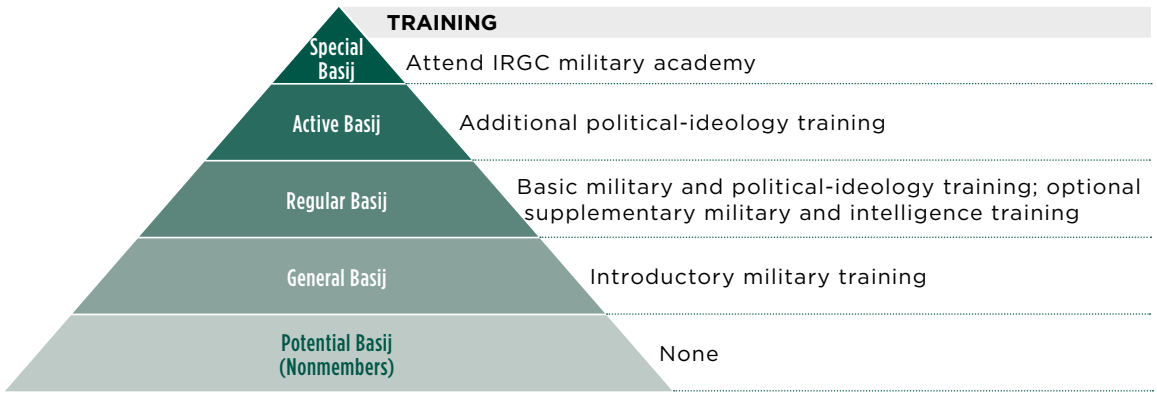
Image Source: AFP

Today, the Basij forms a core part of the regime's internal security apparatus. On multiple occasions, Tehran has used the Basij to help quell domestic unrest, including the widespread 2009 election protests. With branches in almost every Iranian city and town, Basij units aid internal security, law enforcement, suppression of dissent, and moral policing. The Basij has specialized branches for different segments of Iranian society, including the Labor Basij, Tribal Basij, Public Servants' Basij, Students' Basij, and Pupil Basij, which serves as a youth organization. In recent years, Basij personnel have also been part of the contingent of deployed Iranian forces supporting operations in Iraq and Syria.

There are five types of Basij members—potential, general, regular, active, and special—with increasing levels of capability and training, although the precise terms and descriptions for these tiers vary. Potential Basij are not formally enrolled in the BOO but are firm believers in the revolution who participate in Basij activities. General Basij are unpaid and receive a minimum level of training. Regular members are also unpaid part-time volunteers, but they receive more ideological indoctrination and rudimentary training to perform basic security duties during peacetime. Active Basij receive

Basij Types

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greater ideological training and are paid full-time members under temporary contracts. The Special Basij are the most highly trained and experienced members, comparable to full-time IRGC soldiers.[437,438]

The Basij has several core security components with specific missions, including the Ashura, Al Zahra, Beyt ol Moghaddas, Kowsar, Imam Ali, Imam Hossein, and Fatehin battalions. The Ashura (male) and Al Zahra (female) battalions provide local security, neighborhood defense, infrastructure protection, and low-level antiriot support. The Beyt ol Moghaddas (male) and Kowsar (female) battalions are rapid-reaction units, formed from the Ashura and Al Zahra battalions, intended to help defend cities and villages from potential invasion. The more-capable Imam Ali battalions are primarily set up to counter more significant internal security threats and domestic unrest. The Imam Hossein battalions train as light infantry and work closely with the IRGCGF, including some deployments to Syria. Finally, the Fatehin are Basij special forces units, some of which have also deployed to Syria to assist the IRGCGF.

There are widely varying estimates for the size of the Basij, which are further complicated by the organization's different capability levels, unit types, and social groups. Some Iranian officials have claimed there are as many as 22 million Basij, which would constitute about a quarter of Iran's population. Such large estimates, if remotely accurate, would include the many men, women, and children who perform social service and outreach functions as part of the BOO and have little to no military or security training. These members probably significantly outnumber the militarized Basij components.



Female Basij members during a ceremony in 2005.

Image Source: AFP

The Basij probably has around 450,000 active reserve personnel—those with military training who serve in operational units on a semi-regular basis and help staff much of the IRGC provincial corps throughout the country. The Basij may have another 500,000 to one million inactive reserve personnel—those with at least some military training who could be mobilized in wartime. There may be an additional 3–4 million Basij within the BOO with at most basic military training, making roughly 4–5 million a more realistic estimate of the total number of military-age Basij of all types. Estimates in the range of 10-20 million could be possible if they include all nonmilitary components of the BOO.[439,440,441,442,443]

Appendix H: Intelligence Services

The Ministry of Intelligence and Security (MOIS) and the IRGC are the most robust intelligence services in Iran. The MOIS, as a government ministry, remains accountable to the president, while the IRGC remains accountable only to the supreme leader. This bifurcated intelligence structure is intended to ensure that no single organization becomes too powerful. However, tension between the IRGC and MOIS has been a constant fixture of their relationship because their duties overlap and their responsibilities are poorly delineated.[444]

Ministry of Intelligence and Security

The MOIS was founded in 1984 to collect intelligence and lead Iran's domestic security and counterterrorism missions. Minister of Intelligence Mahmud Alavi leads the service, which has about 30,000 officers and support staff. The MOIS is the only Iranian intelligence and security service that reports to both the president and the supreme leader.

According to Iranian law, the MOIS's functions are to:

- Collect, analyze, produce, and categorize internal and external intelligence.
- Uncover acts of conspiracy, subversion, espionage, sabotage, and sedition against the independence, security, and territorial integrity of Iran.
- Protect the intelligence, news, documents, records, facilities, and personnel of the ministry.
- Train and assist organizations and institutions in protecting their significant records, documents, and objects.

Domestic activities are a priority for the MOIS, unless the Supreme Council for National Security (SCNS) or the supreme leader deem it necessary for the ministry to become involved directly with Iran's interests abroad. MOIS intelligence officers conduct the majority of their operations in the Middle East, Central Asia, Europe, and the United States. MOIS collection and influence operations beyond Iran's borders are typically embassy- and consulate-based under official, commercial, academic, or nongovernmental organization cover. The ministry liaises with other foreign intelligence agencies, as well as organizations such as Hizballah that protect and promote Iran's foreign agenda.[445,446] During the 1980s and 1990s, the MOIS was linked to an assas-



Iranian Minister of Intelligence Mahmud Alavi-Tabar.

Image Source: AFP

sination campaign that killed dozens of Iranian dissidents, many of them in Europe. More recently, it has been implicated in the murder of two dissidents in the Netherlands and a foiled plot last year against a People's Mujahedeen of Iran (MEK) rally in Paris.[447,448,449] The MOIS changed its organizational structure in 2017 by elevating its Bureau for Foreign Intelligence, providing the organization with a direct line of accounting in Iran's annual budget separate from the rest of the MOIS.[450]

IRGC Intelligence Organization

The IRGC Intelligence Organization (IRGC-IO)—Iran's foremost military intelligence service, capable of all-source collection, analysis, and investigations—exercises primary dominance over internal Iranian military intelligence responsibilities. Hossein Taeb has led the organization since its inception in October 2009. Taeb reports directly to the supreme leader, although he must also coordinate with the IRGC commander. Regime critics claim the IRGC-IO includes more conservative and violent elements than the MOIS, its parallel intelligence and security organization. However, despite evidence of rivalries between the MOIS and IRGC-IO, both services share the common goal of preserving Iran's clerical regime.[451,452]

IRGC Counterintelligence Organization

The IRGC Counterintelligence Organization (IRGC-CIO) was created in 1983 and is charged with protecting IRGC personnel, operations, and facilities from espionage, information leaks, and other counterrevolutionary threats. Brigadier General Mohammad Kazemi is the commander of the IRGC-CIO.[453]

Artesh Intelligence

The Artesh maintains a joint military intelligence capability in the form of a Directorate for Intelligence (or J2).[454,455] It focuses on traditional tactical intelligence as well as intelligence and counterintelligence operations, security within the Artesh, and coordination with other intelligence bodies.[456]

Law Enforcement Force

Iran's Ministry of Interior controls the Law Enforcement Force (LEF), created in 1991 to incorporate urban police, the rural gendarmerie, and various revolutionary committees.[457] One of the LEF's three main branches is the Counterintelligence Organization, and it maintains an operational unit charged with intelligence gathering, the Intelligence and Public Security Police.[458]

Appendix I: Defense Industry and Modernization Programs

Since the 1979 Islamic Revolution—and the subsequent end of Western arms sales to Tehran—Iran has developed domestic capabilities and fostered new relationships to supply and equip its armed forces, as well as its partners and proxies in the region. During the past few decades Iran has built a domestic defense industry capable of developing and producing select categories of weapon systems, maintaining aging systems, retrofitting older-generation platforms, and reverse-engineering captured technology to meet Iranian military requirements.

Key MODAFL Subordinates[459,460,461]

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Entity	Key Fields of Activity
Defense Industries Organization (DIO)	Tanks, armored vehicles, artillery, small arms, ammunition, explosives
Aerospace Industries Organization (AIO)	Ballistic missiles, cruise missiles, SAMs, AAMs, ATGMs
Iran Aviation Industries Organization (IAIO)	Light aircraft, UAVs
Marine Industries Organization (MIO)	Small boats, surface combatants, submarines
Iran Electronics Industries (IEI)	Radars, communications equipment, EW equipment
Defense Industries Research and Training Institute (DIRTI)	Oversees education and research to promote defense science and technology and achieve self-sufficiency in military industries
Malek-Ashtar University of Technology (MUT)	Military research and development, including in the fields of aerospace, marine, materials, and applied science and engineering

The Ministry of Defense and Armed Forces Logistics (MODAFL) oversees Iran's defense industry. MODAFL's mission is to arm and equip the armed forces through military research and development, production, acquisition, and personnel support. The major industrial organizations subordinate to MODAFL are responsible for the research, development, and production of nearly all types of military hardware, including ballistic and cruise missiles, SAMs, radars, armored vehicles, UAVs, naval vessels, small arms, ammunition, and communications equipment.[462]

Iranian officials and state media often exaggerate the capabilities of Iran's defense industries, stressing the country's self-sufficiency in military production in the face of international sanctions. Tehran often showcases its military capabilities, highlighting new weapon systems and platforms, with public displays that coincide with holidays and historic events.[463] The regime uses such propaganda to message its adversaries and build popular confidence in Iran's capabilities.[464]

Major Modernization Programs

Through 2021, Iran has prioritized the development and production of missile, naval, air defense, UAV, and EW systems, based on priorities published in its sixth 5-year development plan (2017–2021). The plan lists specific defense and security objectives designed to increase Iran's military capabilities.[465] Tehran will also strive to develop its domestic technological base to rely less on foreign suppliers, mitigate the negative effect of sanctions, reduce costs, and enhance economic stability. Iran is slowly increasing the domestic content of its weapon systems and developing the ability to produce key components and materials.[466]

Missile Sector

Within the Aerospace Industries Organization (AIO), the Shahid Hemmat Industries Group (SHIG) and Shahid Bakeri Industries Group (SBIG) are the primary entities responsible for ballistic missile development and production. Iran domestically develops and produces liquid- and solid-propellant CRBMs, SRBMs, and MRBMs and continues to improve the range, lethality, and accuracy of its missile systems. In recent years, Iran has unveiled SRBMs with increasingly greater range and precision as well as MRBMs with claimed accuracy and warhead improvements.[467]



An Ashura MRBM at a production facility in 2009.

Image Source: AFP

Iran is fielding an increasing number of theater ballistic missiles, improving its existing inventory, and developing technical capabilities that could enable it to produce an ICBM. Iran also continues to pursue development of more powerful SLVs. In July 2017 and January 2019, Iran launched its liquid-propellant Simorgh SLV, which could be capable of ICBM ranges if configured as a missile. Tehran also is pursuing long-range, precision LACMs, which present a new type of threat in the region.[468,469]

Naval Sector

Iran's naval programs are primarily aimed at deterring adversaries from operating close to Iranian territorial waters. As such, Tehran's naval modernization efforts focus on providing the IRIN and IRGCN with increasingly lethal platforms and weapons—including advanced mines and torpedoes, small submarines, fast attack craft, and ship- and shore-based ASCMs—that further complicate freedom of navigation throughout Iran's littoral. Although a somewhat lesser focus, Tehran also aims to establish a more far-reaching, strategic naval force. In order to progress toward a "blue water" naval capability, Iran has also invested in developing and producing some larger surface and subsurface platforms.

The Marine Industries Organization (MIO) and its subsidiaries are the primary domestic producers of naval platforms for both of Iran's navies. These industries build a wide range of small high-speed boats equipped with guns, rockets, and missiles primarily for the IRGCN.



An Iranian ASCM-equipped FAC manufactured by MIO.

Image Source: AFP

Iran has built an inventory of hundreds of small boats, and Tehran continues to invest in producing increasingly faster and more-capable platforms armed with more-sophisticated weapons and equipment.

MIO also builds small submarines and surface combatants for the IRIN. After receiving at least one Yono class midget submarine from North Korea in 2004, Iran began domestic production of the platform. Iran has since developed the larger Fateh class coastal submarine, the first of which the IRIN commissioned in February 2019. Iran also domestically produces patrol craft and corvettes for the IRIN. Iran has completed three Jamaran class corvettes, including one on the Caspian Sea. The Jamaran is Tehran's largest naval construction project to date, and Iran has several more under construction.

Iran also produces a variety of naval weapon systems, including ASCMs, mines, and torpe-

does. Iran's domestically produced ASCMs are based on the Chinese C704 and C802. AIO produces the 35-kilometer-range C704 as the Nasr and the 120-kilometer-range C802 as the Noor. It has also developed extended-range variants of the C802/Noor. With these systems—the 200-kilometer-range Ghader and 300-kilometer-range Ghadir ASCMs—Iran has ASCM coverage for nearly the entire Persian Gulf and Gulf of Oman from its shores. In February 2019, Iran revealed footage of its first submarine-launched cruise missile, the Jask-2, a variant of the C704/Nasr ASCM, which can be launched from the IRIN's Yono class midget submarines.[470] During the next 5 years, new naval weapons probably will include additional submarine-launched ASCMs, the Hoot supercavitating torpedo, and potentially a supersonic ASCM.[471,472]



An Iranian C704/Nasr ASCM at a production facility.

Image Source: AFP

Air Defense Sector

Iran can develop and produce SAM systems and radars, including those reverse-engineered from its legacy U.S. and Russian equipment. Iran continues to improve its integrated air defense system (IADS), which is concentrated around Tehran and the nuclear sites, with new air surveillance radars, SAMs, and C4ISR systems.

In recent years, Tehran has unveiled several domestically developed air defense systems, incorporating new SAMs and radars, including the medium-to-long-range Third of Khordad, the medium-range Sayyad-2, and the long-range Sayyad-3. Iran is also domestically developing a long-range air defense system called the Bavar-373 that it claims is more capable than the Russian SA-20c, which Iran acquired in 2016.[473,474] Iran has also announced it is producing more-capable long-range radars, including the Fath 14, with a reported range of 600 kilometers, and the Ghadir phased-array radar, with a reported range of 1,100 kilometers.[475,476]



An Iranian Sayyad-2 SAM at a production facility.

Image Source: AFP

Aircraft Sector

Iran is unable to produce complete combat aircraft, but it has established a robust capability to maintain, upgrade, and modify its aging U.S. and Russian military aircraft. Iran has demonstrated its capability to overhaul fixed-wing transport and combat aircraft, including the U.S.-made F-4, F-5, F-14, and C-130 and the Russian Su-24 and MiG-29. Iran is similarly capable of maintaining and overhauling its helicopter fleet, such as the Russian Mi-17. Iran uses a combination of domestic and foreign components and seeks to modernize aircraft by procuring foreign technologies. Iran aims to be able to produce a modern jet aircraft but is unable to do so without significant foreign assistance. Iran has displayed what it claims are domestically built fighter aircraft, including platforms with low-observable technology, but these have been modifications to existing airframes or mock-ups of aspirational designs.[477]

Iran has steadily expanded its domestic UAV inventory by developing and producing a wide range of lethal and nonlethal UAV platforms. Iran has reverse-engineered many of these systems based on captured Western UAVs. Some of Iran's newer UAV platforms, such as the Shahed-129 and the Mohajer-6, can be armed and are capable of conducting precision air-to-ground strikes with small guided munitions.[478] However, despite advances in its UAV manufacturing capabilities, Iran remains reliant on Western manufactured engines and components to support its UAV production. Iran is developing a domestic UAV engine but is struggling with quality issues.[479]

Ground Arms Sector

Since the end of the Iran-Iraq War, Tehran has invested relatively less in its ground arms sector compared with missile, naval, and air defense capabilities. Iran is unable to fully produce main battle tanks (MBTs), but it has proven able to maintain and upgrade its legacy armor equipment. Iran also produces a wide range of basic ground forces equipment, including small arms, artillery, ammunition, and ATGMs.[480,481]

Appendix J: Arms Transfers

Imports

Procurements for the IRGC and Artesh have largely served to maintain aging systems and modernize the military to be able to better defend against a technologically superior adversary. After the Iran-Iraq War, combat losses and a Western arms embargo made it difficult for Iran to replace its military materiel or obtain spare parts for equipment. However, during the 1990s, Tehran was able to purchase some tanks and armored vehicles, combat aircraft, ASCMs, and attack submarines from Russia, China, and North Korea.[482,483,484] Iran was also able to illicitly procure spare parts for some of its U.S.-origin equipment sold to the country under the shah.[485] More recent arms suppliers to Iran have included Russia, China, North Korea, Belarus, and Ukraine. In 2016, after canceling an earlier contract in 2010, Russia delivered the SA-20c air defense system to Iran—one of the most high-profile Iranian weapons acquisitions in many years.[486]

Tehran continues to face significant procurement obstacles as it remains under an international arms embargo, and many countries are unwilling to sell military equipment to Iran. Passed in 2015, UN Security Council Resolution (UNSCR) 2231, which endorses the Joint Comprehensive Plan of Action (JCPOA), extends ballistic missile and conventional arms restrictions on Iran. Although Tehran prefers to produce what it can domestically to meet military acquisition requirements, Iran remains reliant on countries such as Russia and China for procurement of advanced conventional capabilities.[487]

Under UNSCR 2231, the arms embargo on Iran is set to be lifted by October 2020, allowing Iran to purchase new advanced weapon systems from foreign suppliers to modernize its armed forces, including equipment it has largely been unable to acquire for decades. Iran will be permitted to purchase conventional systems it is unable to produce domestically, such as advanced fighter aircraft and main battle tanks. Iran is already evaluating and discussing military hardware for purchase primarily from Russia and, to a lesser extent, China. Iran's potential acquisitions after the lifting of UNSCR 2231 restrictions include Russian Su-30 fighters, Yak-130 trainers, and T-90 MBTs.[488,489] Iran has also shown interest in acquiring S-400 air defense systems and Bastian coastal defense systems from Russia.[490]

Exports

Under UNSCR 2231, as with its predecessor resolutions, Iran is prohibited from exporting arms and related equipment without UN Security Council (UNSC) approval. Since UNSCR 2231 came into effect, no export proposals have been submitted to the UNSC. Since the Islamic Revolution, Iran has transferred a wide range of weapons and military equipment to state and

UN Security Council Resolution 2231

UNSCR 2231 Annex B restricts Iranian ballistic missile activity and the provision of certain weapons and technology to Iran unless preapproved by the UNSC. UNSCR 2231 endorses the JCPOA but is separate from the nuclear agreement, which does not address ballistic missiles or conventional weapons. Unlike the JCPOA, Iran does not accept UNSCR 2231 Annex B restrictions as legitimate and has not agreed to abide by them. The various military-related restrictions apply for 5 or 8 years from JCPOA Adoption Day—18 October 2015—or when the International Atomic Energy Agency (IAEA) reaches a Broader Conclusion that all nuclear material in Iran is for peaceful purposes, whichever is earlier.[491,492]

- **Designated Entities:** All states are to freeze financial assets and economic resources and block travel of entities and individuals on the 2231 List, drawn from past UNSCRs on Iran. The 2231 List contains 23 individuals and 61 entities associated with Iran's nuclear, missile, and conventional arms programs. These restrictions last for 5 years (travel ban) and 8 years (asset freeze) absent a Broader Conclusion.
- **Conventional Arms Restrictions:** The UNSC must preapprove the supply, sale, or transfer to Iran of seven categories of arms as defined by the UN Register of Conventional Arms (UNROCA) and related materiel, spare parts, training, financial resources, advice, or other services. The seven UNROCA categories are battle tanks, armored combat vehicles, large-caliber artillery systems, combat aircraft, attack helicopters, warships, and missiles and missile systems, including MANPADS but excluding all other SAMs. All states are also to prevent the supply, sale, or transfer of arms or related materiel from Iran unless preapproved by the UNSC. These restrictions last for 5 years (October 2020) absent a Broader Conclusion.
- **Ballistic Missile Restrictions:** Iran is called upon not to undertake any activity related to ballistic missiles designed to be capable of delivering nuclear weapons, including launches using such ballistic missile technology. The United States uses Missile Technology Control Regime (MTCR) Category I criteria to assert that missiles capable of delivering at least a 500-kg payload to a range of at least 300 kilometers are inherently capable of delivering nuclear weapons. The UNSC must also preapprove the supply, sale, or transfer to or from Iran of all items, materials, equipment, goods, and technology set out in the MTCR or that could contribute to the development of nuclear weapon delivery systems. These restrictions last for 8 years (October 2023) absent a Broader Conclusion.

The MTCR is a 35-member voluntary, multilateral agreement that establishes export control standards for missiles and missile technology. The MTCR is not a treaty or legally binding, but UNSCR 2231 establishes it as a global standard for restricted transfers to and from Iran. Member states enforce the MTCR regardless of the status of UNSCR 2231.

nonstate actors, including designated terrorist organizations. Iran has also provided technical assistance to help nonstate actors produce and assemble their own equipment. Although some Iranian shipments have been interdicted, Tehran is often able to get high-priority arms transfers to its customers.

Over the years, Iranian transfers to state and nonstate actors have included: communications equipment; small arms—such as assault rifles, sniper rifles, machine guns, mortars, and rocket-propelled grenades (RPGs)—and ammunition; ATGMs; MANPADS; artillery systems, including MRLs and battlefield rockets and launchers; armored vehicles; FAC; equipment for unmanned explosives boats; ASCMs; SAMs; UAVs, including ISR and attack platforms; ground-attack aircraft; and C/SRBMs and associated technology.

Iran's biggest customers include Syria, Hizballah in Lebanon, and Iraqi Shia militias, but Iran has also provided weapons to the Huthis in Yemen, Palestinian groups, and the Taliban in Afghanistan. Since UNSCR 1747, which first established the arms export ban on Iran, was adopted in 2007, other state customers of Iranian military equipment have included Iraq, Sudan, and Venezuela. In late 2013, Iran agreed to a $195-million deal to sell arms to the Iraqi government, including small arms, ammunition, artillery rounds, and communications equipment.[493,494,495,496,497,498,499] Significant quantities of Iranian small arms, light weapons, and ammunition can also be found on the international gray arms market and have been identified in various war zones, including throughout central Africa. However, it is difficult to determine if these are instances of direct transfers or sales from the Iranian government.[500]

Recipients of Iranian Arms

1805-17885



Graphic Source: DIA, D3 Design

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GLOSSARY OF ABBREVIATIONS

A2/AD	antiaccess/area denial
AA	army aviation
AAM	air-to-air missile
AEOI	Atomic Energy Organization of Iran
AFGS	Armed Forces General Staff
AGMC	Al-Ghadir Missile Command
AIO	Aerospace Industries Organization
ASBM	antiship ballistic missile
ASCM	antiship cruise missile
ATGM	antitank guided missile
BOO	Basij Organization of the Oppressed
BWC	Biological and Toxin Weapons Convention
C2	command and control
C4ISR	command, control, communications, computers, intelligence, surveillance, and reconnaissance
CDCM	coastal defense cruise missile
CHOD	chief of defense
CRBM	close-range ballistic missile
CWC	Chemical Weapons Convention
D&D	denial and deception
DIO	Defense Industries Organization
DIRTI	Defense Industries Research and Training Institute
DNG	deployed naval group
EFP	explosively formed penetrator
EW	electronic warfare
FAC	fast attack craft
FIAC	fast inshore attack craft
FTO	foreign terrorist organization
GDP	gross domestic product
IADS	integrated air defense system
IAEA	International Atomic Energy Agency
IAIO	Iran Aviation Industries Organization
ICBM	intercontinental ballistic missile
IED	improvised explosive device
IEI	Iran Electronics Industries
IONS	Indian Ocean Naval Symposium
IRBM	intermediate-range ballistic missile
IRGC	Islamic Revolutionary Guard Corps
IRGCASF	Islamic Revolutionary Guard Corps Aerospace Force
IRGC-CIO	Islamic Revolutionary Guard Corps Counterintelligence Organization
IRGCGF	Islamic Revolutionary Guard Corps Ground Force
IRGC-IO	Islamic Revolutionary Guard Corps Intelligence Organization
IRGCN	Islamic Revolutionary Guard Corps Navy
IRGC-QF	Islamic Revolutionary Guard Corps Qods Force

IRIADF	Islamic Republic of Iran Air Defense Force
IRIAF	Islamic Republic of Iran Air Force
IRIGF	Islamic Republic of Iran Ground Force
IRIN	Islamic Republic of Iran Navy
ISIS	Islamic State of Iraq and ash-Sham
ISR	intelligence, surveillance, and reconnaissance
JAA	Jaish ul-Adl
JCPOA	Joint Comprehensive Plan of Action
KADHQ	Khatemolanbia Air Defense Headquarters
KCHQ	Khatemolanbia Central Headquarters
KDPI	Kurdish Democratic Party of Iran
LACM	land-attack cruise missile
LEF	Law Enforcement Force
MANPADS	man-portable air defense system
MARSOF	maritime special operations forces
MARV	maneuverable reentry vehicle
MBT	main battle tank
MEK	People's Mujahedeen of Iran
MFA	Ministry of Foreign Affairs
MIO	Marine Industries Organization
MODAFL	Ministry of Defense and Armed Forces Logistics
MOIS	Ministry of Intelligence and Security
MRBM	medium-range ballistic missile
MRL	multiple rocket launcher
MTCR	Missile Technology Control Regime
MUT	Malek-Ashtar University of Technology
NPDO	National Passive Defense Organization
NPT	Nonproliferation Treaty
PFLP-GC	Popular Front for the Liberation of Palestine–General Command
PHRC	Physics Research Center
PIJ	Palestine Islamic Jihad
PJAK	Free Life Party of Kurdistan
PMC	Popular Mobilization Committee
PMF	Popular Mobilization Forces
RPG	rocket-propelled grenade
SAM	surface-to-air missile
SBIG	Shahid Bakeri Industries Group
SBS	Special Boat Service
SCNS	Supreme Council for National Security
SHIG	Shahid Hemmat Industries Group
SLV	space launch vehicle
SNSF	Sepah Navy Special Force
SOC	sector operations center
SOF	special operations forces
SRBM	short-range ballistic missile
UAV	unmanned aerial vehicle
UF_6	Uranium hexafluoride
UGF	underground facility
UN	United Nations
UNAMID	African Union-United Nations Hybrid Operation in Darfur
UNSC	UN Security Council
UNSCR	UN Security Council Resolution
VBSS	visit, board, search, and seizure
WMD	weapons of mass destruction

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